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Vol. XXVII, No. 1

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Covers the period 1950-1956

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## FOREWORD

**I**N February 1956 the First International Conference on Educational Research was held at Atlantic City. The conference was sponsored by the American Educational Research Association thru its Committee on International Relations and supported in part by UNESCO. This courageous venture brought together representatives of 11 countries (Australia, Belgium, Brazil, Canada, Chile, England, France, Germany, Japan, United States, and U. S. S. R.) to discuss problems and possibilities of international cooperation in educational research.

Outcomes of the conference included recommendations for improved communications among educational research workers. As a result of these recommendations I met with participants during the last day of the conference and tentative plans for this issue were made. The project was not undertaken without some misgivings. It is a considerable task to assemble an ordinary issue of the *REVIEW* when chapter authors are all from the United States. The problems of obtaining contributions of *REVIEW* style and caliber (translated where necessary) from all over the world, on the *REVIEW* schedule, are formidable. At an evening meeting just before conference members scattered across the world, the project began to seem possible as well as desirable when Leo R. Fernig of UNESCO agreed to act as subchairman for Europe, assisting in obtaining contributors, and arranging for translations where necessary. The next day Victor H. Noll, Chairman of the AERA Committee on International Relations, consented to act as issue chairman despite other burdensome commitments. With this good start the concurrence of the *REVIEW* editorial board was obtained, and work began on the issue immediately.

The discerning reader will discover that 10 languages have been used in the bibliographies. The titles have been translated, but for the most part other bibliographical data have been left in the language of the country of origin; translation only makes finding a foreign-language reference more difficult. Unfortunately one of the languages not included is Russian; despite arduous efforts, no contribution was received from the U. S. S. R.

Educational research in the United States was reviewed in the June 1956 *REVIEW* (Vol. 26, No. 3) entitled "Twenty-Five Years of Educational Research." That issue and this one provide a survey of the current status and most important developments in educational research on the world scene.

It is hoped that this issue will prove of interest and value to members of the AERA and their colleagues abroad.

Tom A. Lamke, *Editor*

*REVIEW OF EDUCATIONAL RESEARCH*

## INTRODUCTION

IN view of the fact that relatively few countries are represented in this issue, it is most gratifying to have so much reported. To be sure, many references cited do not meet what would be regarded as rather liberal standards of educational research in the United States. Many seem rather obviously philosophical or even polemic in character. Also, it may probably be assumed that the countries represented at the conference, and to a somewhat similar degree those included here, are the ones that have something to report. But allowing for these considerations, there still remains, taken altogether, a substantial body of apparently solid research material in the reports. This should be a matter of great satisfaction and encouragement to the members of the American Educational Research Association and to all those who are devoted to research as a method of attacking educational problems and achieving progress.

One cannot help but be impressed also by the great variation in standards or ideas of what constitutes research. This has already been alluded to in the preceding paragraph, but it deserves some further comment. In the guide sheet sent to all contributors, some criteria were offered as guides that would tend to restrict the material cited to what would generally fall within the purview of regular issues of the REVIEW. The 11 categories which they regularly cover were given as a scheme of organization. This was quite consistently adhered to by contributors. Also, the following statement was included: "Articles presenting conclusions based largely or solely on the opinions or judgments of the author do not fall within the purview of this issue." In spite of these suggestions many reports were cited which obviously violate this restriction. In some cases this may have been the result of a natural desire to make a good showing. It seems, also, to reveal a wide variation in concept of what constitutes research. In this country it is generally recognized that greatest progress in education and psychology resulted when they separated from philosophy, and applied scientific rather than philosophical methods to their problems. Whether this would follow in other countries we do not know, but probably most members of the AERA would think so. In any case, these variations and divergencies of viewpoint regarding the nature, purposes, and sphere of educational research present a very real problem in communication. They indicate a need for a meeting of minds, for continuing exchange of views, and for regular open channels of communication between research workers wherever they may be. This issue of the REVIEW may serve a very useful purpose in emphasizing the need for such communication and suggesting means for meeting it. There would seem to be no doubt that the need exists, that there is something worth communicating, that there is an interest in moving forward, and that there is a willingness to cooperate in widely scattered parts of the globe.

Another respect in which the reports emphasize differences is with respect to terminology. In some cases this is probably due at least in

part to the difficulties of translation into English. But even in the reports prepared in English-speaking countries strange terms appear now and then, and one suspects that meaning may sometimes be changed or lost because familiar words are used in unfamiliar ways or context. These language barriers are too well known to require discussion here, but experience with this international issue of the REVIEW serves to give renewed emphasis to the need for some thoro study of educational terminology in different countries and the production of an international dictionary in this field.

Finally, it should be said that while differences exist, substantial similarities and agreements are also evident in these reports. Among these are concern with much the same educational problems and needs in all countries. Illiteracy, the slow learner, the teaching of the basic fundamentals, development of character and personality, problems of adjustment, counseling, selection, education of teachers, and the psychology of learning, to name but a few of those found in nearly every paper, bring out the similarity of the issues that face education everywhere today.

If, as this issue of the REVIEW strongly suggests, the fundamental problems of education are the same in most countries, the differences which may cause misunderstanding and impede progress should certainly be brought out into the open, examined, and discussed. If this is done, most of them will probably either be resolved or gradually disappear. To accomplish this, continuous and free communication is needed. It is hoped that this issue of the REVIEW may contribute to this objective.

Especial thanks are due Leo R. Fernig of UNESCO who acted as regional chairman for continental Europe, and Ismael Rodriguez Bou, who accepted a similar responsibility for Latin America. Reviews from these two parts of the world are the results of their respective efforts, including translations where necessary. W. C. Radford assisted by obtaining the contribution from New Zealand. The chairman wishes also to express particular appreciation to the editor of the REVIEW, Tom A. Lamke, who did most of the preliminary corresponding and was of great assistance in the entire project.

Victor H. Noll, *Chairman*  
*Committee on Educational Research*  
*in Countries Outside the U. S. A.*

## CHAPTER I

### Australia and New Zealand

#### Section A: Australia

W. C. RADFORD\*

IN AUSTRALIA, educational research is undertaken in universities, state departments of education, teachers colleges, the Commonwealth Office of Education (COE), and the Australian Council for Educational Research (ACER). The growth of university departments of education since World War II has led to an increased volume of research work. Relatively little work is reported in book form, and as there is no journal devoted specifically to research, what appears in print is restricted in quantity and is often presented in too condensed a form for proper appraisal. This survey draws on mimeographed materials and on articles and abstracts in books and journals.

There is no central repository for abstracts nor any microfilming service for distribution overseas of unpublished research studies. Within Australia, interlibrary loans provide some help. The ACER (2) distributed in 1953 a list of theses in university libraries in Australia and published one supplement in 1955. Since 1950 the COE (15) has prepared an annual listing of research entitled *Educational Research Being Undertaken in Australia* which since 1952 has included selected abstracts.

State departments are concerned mostly with research into their own administrative problems, the COE with questions related to its particular functions, and the ACER with matters of Australian significance. The universities have not developed specialties altho there are signs that they are tending to do so. No center in Australia is devoted solely to research into a particular area of education altho the ACER has a section devoted to test development and research and the University of Queensland has a remedial education center. There are as yet no child development centers. The growth of departments of psychology in the universities has led recently to greater interest in the social psychology of education.

In general, Australia has few trained research workers engaged in research since many of those with the necessary training move into administrative work in which time and opportunity for research are limited. University staffs have varied in productivity, and most of their time is spent in supervising and guiding students, very few of whom move immediately into research work.

Many important areas of education have received scant attention in print. There is an absence of studies of the administrative process, little work of a general sociological nature, and very little attention given to

\* The author is indebted to T. S. Duff and M. Dunstan for assistance in compiling the materials on which this review is based.



problems of methodology. Little has yet been attempted in integrating completed research work or determining its implications. In general, it is still true that Australian research is not strongly influencing Australian practice. Few experimental studies are reported; the majority of the work done is by survey, and the use of the more recently devised technics of research is still rare.

### Administration

Butts (9) presented a survey of assumptions underlying Australian education and of their observed effects, following six months of observation as a Fulbright scholar. The administrative process in Australia—the effects of centralized administration and the place of the private and church schools, for example—has not otherwise been critically examined. Research into aspects of administration has been chiefly (a) descriptive surveys, (b) predictions of enrolments, (c) studies of wastage of talent, and (d) analyses of defects in facilities.

A general description of the operation and administration of aspects of compulsory education in Australia was prepared by the Australian National Cooperating Body for Education and published by UNESCO (68). A more comprehensive account of Australian education, prepared mostly by the COE, appeared in the Commonwealth Year Book (12). Illustrative of other descriptive matter are COE bulletins dealing with such subjects as guidance services (13), and the ACER survey of non-government schools (57) and its *Review of Education in Australia 1948-54* (36). The state of government secondary schools in New South Wales was reviewed by the teachers federation of that state in evidence before a committee of inquiry (43).

All state departments are engaged for practical reasons in predicting future enrolments. For example, the Queensland Department of Public Instruction (50) estimated that by 1961, it would require 25 new high schools and 36 new secondary "tops" to primary schools, and over 1100 additional teachers for such schools. The COE (16) forecast an enrolment of 43,000 in Australian universities in 1962—an increase of 45 percent over the 1955 figures. A great deal of important work is never published but forms the basis of administrative policies.

Brown (6) made a careful study of the holding power of high schools in Sydney and found academic high schools had greater holding power than other types. Continuation in secondary schools, among boys of equal ability, was related to father's occupation. In order of importance boys gave their reasons for leaving school as lack of success in study, desire for independence, irrelevance of school, and financial hardship. At the tertiary level, Hohne (28, 29), Olson (46), and others were concerned with academic failures at universities and pointed out high failure rates. Studies within technical schools in New South Wales also indicated high rates of loss there (36).



Defects in accommodation and overlarge classes were publicly reported by teachers bodies. Typical of these was a survey made by the Victorian Teachers' Union (69) of some 500 schools, in which 32 percent of classes had more than 45 pupils each. In New South Wales the teachers federation (43) reported that 16 percent of secondary classes had more than 45 pupils each in 1955, 33 percent having more than 40 each.

The major change in administrative practice in this period was decentralization of some aspects of administration in New South Wales following a five-year experiment in one area. No empirical evidence was presented, the decision being based on observation and administrative assessment of its value (79).

### Curriculum

There was little discussion of principles and technics of curriculum construction. Most studies were concerned with subjects or grouping of subjects, and critical analyses were rare. Schonell (62) and Wheeler (71) discussed the general principles of curriculum building with particular reference to individual needs and desirable outcomes, and Connell (17) recommended the use of laboratory workshops for cooperative curriculum building.

The most comprehensive study made of actual offerings was that published by the ACER (3) in *English and Arithmetic for the Australian Child*. After an analysis of courses in English and arithmetic used in the six states, of teaching practices, and of test results from some 30,000 children in Grades III thru VIII, it reported wide variation in expectation and achievement at comparable ages, in time allotments, and in teaching practices.

More published attention has been given to social studies than to other topics or subjects. For example, Rogers (59) reported a suggestive experiment, lacking in research precision, in which teachers in training used group procedures in social studies lessons in Grades III thru VIII and found them workable in the primary school. Rayner (58) investigated the knowledge of civic matters of children at an age just before the end of compulsory schooling and found unexpected ignorance of very common social concepts.

In a series of comparative studies, the Queensland Department of Public Instruction (52, 53, 54) assessed the achievement in arithmetic, reading, and spelling of children in Queensland schools and found that syllabus changes had not led to deterioration in quality of work.

### Educational Measurement

There was constant appraisal of the validity and reliability of measuring instruments, and improvement in the quality of test manuals and testing practice, but little reported work on fundamental questions of

measurement, on the application of advanced statistical technics, or on the development of new tools or procedures.

Accepted practices were called into question. Keats (33), in a careful examination of distributions of scores on standardized tests, found that they could be represented adequately by the Beta Function; he discussed the dependence of mean and variance in such distributions, and pointed out that this could invalidate the use of currently used technics. Spearritt and Keats (65) reported on longitudinal comparisons of IQ's on comparable tests at different ages, and arising from these, recommended the use of percentile norms rather than standard score IQ's.

Testing programs yielding valuable results for guidance were reported by Spearritt (64), who worked with 18-year-old National Service trainees, and by the Queensland Department of Public Instruction (56) which periodically checked the effectiveness of its guidance battery.

Hohne (28, 29) related test and prior examination results of university students in Melbourne to their later university success. Philp and Cullen (48) investigated the relation of age and academic success of entrants to the University of Sydney, and Sanders (61) continued his work in the same field, presenting a comprehensive review of studies made in Australia and elsewhere.

Typical of other work on measurement technics were Howie's examination (31) of the Burt and Thurstone methods of factorizing data, and Gault's factorial study (23) of the *WISC*.

### Educational Psychology

Examples cited below are typical of the varied specific work reported in this general area.

Pentony (47) found that there was a positive relationship between a democratic home environment and sociability and constructiveness in the nursery school, that recent arrivals from European countries tended to be more authoritarian, and that children from such families tended to be withdrawn in play center situations.

Debus (20) reported aggression typical of the behavior of 32 three- and four-year-olds studied in a play situation over a 40-day period. About one-fifth was unprovoked. There were indications that aggressiveness and unsatisfactory home conditions were related.

Buckle (7) studied speech defects and lateral dominance in groups of 100 cases of stammer, 100 cases of dyslalia, and 100 randomly chosen normal children. He found no association between dominance and speech defects.

Wyeth (78), Eymard (22), and others studied aspects of personality of school children, using the Tryon "Guess Who?" technic, and sociometric questions. The outstanding findings were that leaders or accepted children are those who can identify with and supply the needs of others in the school situation, and that rejected children are those who hinder

the group. Wheeler (73) presented a careful analytic study of Western Australian adolescents centered around popularity and status, pointing out that there were differences between the characteristics favored within and outside the classroom.

Staff and students of the Department of Education, University of Queensland, under Schonell's guidance studied the incidence of backwardness and dullness in many Queensland schools. For example, Meddleton (39) studied three large schools in Brisbane in which general backwardness (attainment 85 percent or less of normal for chronological age) was found in 11 percent of children.

### Educational Sociology

Studies in this area have so far been fragmentary and uncoordinated, but there is growing interest in educational sociology.

Collins (11) surveyed the intelligence of Tasmanian school children, and found negative correlations between intelligence and size of family, zero correlations between intelligence and birth order, and significant differences between the average intelligence of occupational groups.

Crane (19), after studying reports of gang membership in their adolescent years given by teachers college students at Armidale, New South Wales, concluded that gangs do not necessarily arise only in subnormal or borderline environments, nor is membership in them a symptom of predelinquency. In a later article (18), based on work with children, he concluded that, between the ages of 10 and 14, boys tend to gang membership more than girls because they tend to identify less during those ages with a male adult with whom they are in close contact.

Greig (24) studied the job expectations of boys in Victorian junior technical schools (ages about 14 or 15) and found few boys or their parents able to make realistic choices based on knowledge of jobs, of qualifications for them, or of abilities needed.

Studies of reading habits, radio listening, and attendance at cinema were reported. Typical of these were two studies by Wyeth on radio listening, one a cross-sectional (77) and the other a longitudinal study (76). Changes with age were reported in the kind of program listened to.

The work of the Department of Psychology in the University of Melbourne broke new ground for Australia. Oeser and Hammond (45) and Oeser and Emery (44) reported sophisticated analyses of a complex collection of data related to family attitudes, family structure, social class, child upbringing, and school climate in (a) a Protestant group in a middle-class suburb in Melbourne, and (b) a rural area in Victoria. The studies are distinctive both in their technics of data collection and in the ingenuity and logical intensity of the analyses made of the data. Their implications for education lie in the demonstrations given of the relation of (a) parental and teacher attitudes to child behavior, and (b) the child's perception of the school and its task to his attitudes toward school.

## Guidance and Counseling

No specific studies were reported. Related studies with implications for guidance, reported elsewhere, are those of Hohne (28), Olson (46), Greig (24), Kemp (34), Spearritt (64), and the Queensland Department of Public Instruction (56).

## Mental and Physical Development

There have been no longitudinal studies yet completed in Australia, and, as in other areas, there are no integrated programs based on a definite research plan. The nature of the work being done is illustrated by the following examples.

Kemp (34) studied a group of 243 children in two secondary schools in New South Wales and concluded that slightly more than 50 percent exhibited a relatively stable IQ from year to year. The remainder were less stable, some fluctuating 20 to 30 points of IQ.

Burge (8) prepared and normed tests of running speed, eye and hand coordination, agility, spring, strength, and endurance. Growth in general physical ability increased from 9 thru 13 years of age (as far as this study went). Information was given about sex differences and the relation of physical ability to many other factors. Physical ability appeared to play a much more significant part in the life of a boy than of a girl.

## Language Arts

Attention was devoted principally to reading, spelling, and vocabulary as they affect school practice and standards. There were studies of standards, of techniques, and of methods for improving results. Following are illustrative examples.

Horwood (30) discussed the principles to be used in the study of the vocabulary of school readers and applied these to a Tasmanian reader. Anderson (1) and Pond (49) analyzed the vocabulary of several readers, and Pond the content also, pointing out differences between different reading books in current use in schools. Wheeler (72) compared the reading speed of Australian and American children on the basis of published norms and concluded that Australian speeds were slower.

The Queensland Department of Public Instruction (51) reported an evaluation of the results of teaching reading by whole word and by phonic methods. Neither method produced clearly superior results, but the general conclusions favored the whole-word method because of such matters as increased interest in reading.

Matthews (38) surveyed methods of teaching spelling to Grades V, VI, and VII in 11 South Australian schools. Teachers' methods varied considerably, and recommendations based on the replies given to a questionnaire gave emphasis to more child-centered methods. Walker (70) ex-

amined the value of pretesting in spelling in 52 classes from Grades II to VI in nine schools in Western Australia and concluded that it was an efficient means of presenting words of average difficulty provided it was followed by organized specific learning. McDonald (35) reported that the percentages of words accurately spelled in compositions by South Australian children rose from 94.5 in Grade II to 98.7 in Grade VII.

The ACER (4) reported in bulletins the results of an intensive study of the speech of 24 children from an industrial suburb. In addition to other analyses, a vocabulary of the 480 most common words used in speech by these children was compiled and compared with other vocabulary lists. When classified by function, differences were found between the sexes in the use of speech and its relation to other characteristics of the children (5). Schonell and others (63) reported a detailed study of the oral vocabulary of the Australian worker based on recordings and interviews, carefully analyzed and classified.

### Mathematics

Cawte (10) reported an experiment in a South Australian primary school which raised the standard of arithmetic by the regular motivated use of speed and accuracy tests.

Nay (42) demonstrated that classes taught arithmetic every day of every week as is normally the practice were not appreciably better at arithmetic after 24 weeks than classes similar in ability receiving about one-third less teaching.

The Department of Public Instruction in Queensland (55) determined for Queensland children in Grade III the relative difficulty of basic multiplication and division facts and of the relevant decade addition and subtraction facts, and found they did not always conform to the findings of overseas investigators.

### Science

There is a surprising lack of work in this field. Meyer (40) reported that biology was taught in less than 20 percent of secondary schools in New South Wales, to about 12 percent of secondary-school pupils. Meyer (41) also reported the tendency at Leaving Certificate level in New South Wales to reserve biology for the less able students. Harris (27) made a broad exploratory investigation into nature study in Grades III and IV in New South Wales and claimed improvements in knowledge and understanding due to a carefully prepared curriculum. Woods (74) showed that many geographical terms used in course textbooks were not known to children for whom the texts were recommended, and that these texts carried a heavy burden of words not included in Thorndike word lists.

### Research Methods

Keats (33) discussed problems of transformation of distributions to make mean and variance independent, suggested a new index of test reliability, and drew attention to the need for care in using many accepted technics of data analysis because so many of the assumptions underlying them were not maintained by the usual distributions of test scores.

Dunn, Keats, and Spearritt (21) drew attention to the unavoidable negative correlations between initial IQ and improvement in IQ between first and second testing with tests having artificially equated variances.

Hohne (28) reported the use of pattern analysis as one way of attempting to improve prediction of university success. He discussed, also, methods of using group Rorschach protocols for similar prediction and found global assessments more fruitful than checklists.

Reports by Oeser and Hammond (45) and Oeser and Emery (44) included numerous indexes and scales derived from their data on social structure, family structure, attitudes toward school, child adjustment, and the like. Their work is a fruitful source for ideas and procedures for use in inquiry into the social psychology of education. Family structure, for example, was classified, as a result of child responses to a set of simple questions about who does what in the home, into husband autocratic, wife autocratic, autonomic, and syncretic, and these patterns were then related to many aspects of child life and adjustment (45). The matrix sorter devised by Hammond (26) has been used to advantage in the economical analysis of many matrixes of variables.

### Special Programs

Altho there are many provisions for handicapped children and other special groups, these programs are rarely evaluated by direct methods. Subjective assessment still plays a large part in decision about methods, organization, or continuation of programs.

Jones (32) examined the high-school records of bright pupils selected in certain New South Wales primary schools for special opportunity classes in the Classes V and VI. The pupils tended to remain longer at secondary school than the remainder of their generation, but no longer than a similar group matched on age, intellectual ability, and school attainments prior to high-school entrance.

Brereton, working in the COE, studied educational problems associated with hard-of-hearing children. She developed measures for assessing the achievement of children in certain educational fields taking into account age, degree of hearing loss, and intelligence (15).

Thody (66) analyzed the university records of students who first passed the examinations for matriculation to the University of Melbourne at an age lower than normally accepted by the university for entrance. He concluded that there was a minimum level of success on the matricu-



lation examination below which such students should not proceed immediately to the university but should spend at least another year at school.

### Teacher Personnel

Recruitment and selection of teachers have been major problems in Australia since World War II. No exact appraisal of the effectiveness of either was made, and research in the area, altho it increased, was disappointing in quantity and often lacking in exact relevance to success on the job.

Hale (25), reporting briefly on an exhaustive study of students in teachers colleges in New South Wales, found little change in a wide range of attitudes assessed at the beginning and end of a two-year course.

Wyeth (75) found that for over 1000 student teachers in teachers colleges in Australia the best liked teachers were those who were friendly, helpful, of good teaching ability, cheerful, patient, tactful, considerate, understanding, good mixers with students, strict, and good disciplinarians. The least liked were harsh, cruel, overstrict, sarcastic, nagging, and sneering.

McIlroy and Ritter (37) examined the socioeconomic background of student teachers in Victorian teachers colleges in 1951 and found that in general they came from employee groups and would not be improved in economic status above their own families by becoming teachers. Female students came from homes of a higher socioeconomic level than did male students. Rural areas provided more students than the metropolitan area.

Turner (67) reported that Sydney Teachers College students with two years' training there performed on the ETS *National Teacher Examinations* as well as a four-year trained group in 21 institutions in the United States; the four-year trained group in Sydney was distinctly superior to the United States group.

Representative of discussions of courses was one by St. Ellen and Shears (60), who described an integrated two-year course in education for student teachers in a teachers college in Melbourne, designed to integrate history, principles, and psychology.

### Conclusion

Increasing attention was given during the period under review to aspects of social psychology of education, the major published work in this field emanating from the University of Melbourne. The social dynamics of learning situations in school and teachers college classrooms was examined by postgraduate students and by staffs of teachers colleges and university departments. A number of publications dealt with historical matters such as the growth of the centralized and Catholic systems, the work of leading Australian educators, and the development of secondary

education; these are not reported here but constitute a considerable body of material. Attention was also given to teachers, their origin, assessment, and training.

Current interest in the needs of a technological society is drawing increasing attention to questions of conservation of human talent, the nature of secondary education, and the purposes and effectiveness of university education. Care will be needed in the next decade to ensure that kindergarten and elementary education are not neglected.

At the present time probably the outstanding complex of problems requiring coordinated study are those relating to the content of secondary education.

### Bibliography

1. ANDERSON, H. "Readers, Past and Present." *Educational Magazine* (Victorian Education Department) 10: 110-14; April 1953.
2. AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH. *Theses in Education and Educational Psychology Accepted for Degrees at Australian Universities, 1919-1950*. Melbourne: the Council, 1953. 36 p. (Mimeo.) *Supplement, 1951-1953*. Melbourne: the Council, 1955. 34 p. (Mimeo.)
3. AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH. *English and Arithmetic for the Australian Child*. Melbourne: the Council, 1951. 36 p.
4. AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH. *A Speech Vocabulary of Australian Pre-School Children*. Information Bulletin No. 23. Melbourne: the Council, July 1951. 8 p. (Mimeo.)
5. AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH. *The Functional Classification of Child Speech*. Information Bulletin No. 30. Melbourne: the Council, June 1953. 18 p. (Mimeo.)
6. BROWN, M. S. "The Holding Power of High Schools in Sydney." *Forum of Education* (Teachers College, Sydney) 13: 49-62; October 1954. 14: 1-8; July 1955.
7. BUCKLE, D. F. "Speech Defects and Lateral Dominance." *Journal of the Australian College of Speech Therapists* (Melbourne) 1: 13-16; October 1951.
8. BURGE, I. C. "An Experimental Investigation into Basic Skills of Primary School Children by Means of Tests and Cumulative Studies." (Abstract) *Educational Research Being Undertaken in Australia 1956*. No. 52. Sydney: Commonwealth Office of Education, August 1956. (Mimeo.)
9. BUTTS, R. FREEMAN. *Assumptions Underlying Australian Education*. Melbourne: Australian Council for Educational Research, 1955. 80 p.
10. CAWTE, F. "An Experiment in Basic Number Work." *Forum of Education* (Teachers College, Sydney) 6: 56-59; November 1950. 7: 1-4; April 1951.
11. COLLINS, T. G. "An Intelligence Survey of Tasmanian School Children." *Tasmanian Education* (Tasmanian Education Department) 5: 220-25; August 1950.
12. COMMONWEALTH BUREAU OF CENSUS AND STATISTICS. *Year Book of the Commonwealth of Australia*. Canberra: the Bureau, 1954. Chapter 11, p. 429-88.
13. COMMONWEALTH OFFICE OF EDUCATION. *Educational Guidance Services in State Education Departments of Australia*. Bulletin No. 14. Revised edition. Sydney: the Office, 1953. 22 p. (Mimeo.)
14. COMMONWEALTH OFFICE OF EDUCATION. *The Educational Potentialities of Cerebral Palsied Children: 1. Mental Capacity*. Research Report No. 5. 17 p. 2. *Design for Experimental Study of Educational and Social Efficiency*. Research Report No. 9. 22 p. Sydney: the Office, July 1950 and November 1952. (Mimeo.)
15. COMMONWEALTH OFFICE OF EDUCATION. *Educational Research Being Undertaken in Australia*. Sydney: the Office, 1950, 1951, 1952, 1953, 1954, 1955, 1956.
16. COMMONWEALTH OFFICE OF EDUCATION. "Predicted Enrolments at Australian Universities." *Education News* 5: 10-11; August 1956.



17. CONNELL, W. F. "In-Service Training of Teachers Through Curriculum Laboratory Workshops." *Forum of Education* (Teachers College, Sydney) 11: 2-9; July 1952.
18. CRANE, A. R. "Pre-Adolescent Gangs: A Socio-Psychological Interpretation." *Journal of Genetic Psychology* 86: 275-79; June 1955.
19. CRANE, A. R. "Pre-Adolescent Gangs: A Topological Interpretation." *Journal of Genetic Psychology* 81: 113-23; September 1952.
20. DEBUS, R. L. "Aggressive Behaviour in Young Children." *Forum of Education* (Teachers College, Sydney) 11: 95-105; April 1953.
21. DUNN, S. S.; KEATS, J. A.; and SPEARRITT, D. "Are Standard Score Norms Adequate?" (Abstract) *Educational Research Being Undertaken in Australia*, 1953. No. 47. Sydney: Commonwealth Office of Education, July 1953. (Mimeo.)
22. EYMARD, SISTER M. "An Investigation of Some of the Personality Traits Associated with Leaders and Rejected Children." (Abstract) *Journal of Education* (Victorian Institute for Educational Research) 2: 72-73; July 1955.
23. GAULT, U. "Factorial Patterns of the Wechsler Intelligence Scales." *Australian Journal of Psychology* 6: 85-89; June 1954.
24. GREIG, A. R. "A Study of Job Expectations and Preferences of Form III Students in Victorian Technical Schools." *Australian Journal of Psychology* 2: 80-89; December 1950.
25. HALE, M. E. "Are Teachers' Colleges Wasting Some of Their Time?" *Forum of Education* (Teachers College, Sydney) 12: 102-103; April 1954.
26. HAMMOND, S. B. *Manual of Directions for Use with the Hammond Matrix Sorter*. Melbourne: Australian Council for Educational Research, 1953. 7 p. (Mimeo.)
27. HARRIS, T. Y. *The Teaching of Nature Study*. Melbourne: Australian Council for Educational Research, 1954. 300 p.
28. HOHNE, H. H. *The Prediction of Academic Success*. Melbourne: Australian Council for Educational Research, 1951. Part 1, 159 p. Part 2, 70 p. (Mimeo.)
29. HOHNE, H. H. *Success and Failure in Scientific Faculties in the University of Melbourne*. Melbourne: Australian Council for Educational Research, 1956. 129 p. (Mimeo.)
30. HORWOOD, F. W. "Evaluation of Vocabulary of Reading Material." *Tasmanian Education* (Tasmanian Education Department) 5: 368-82; December 1950.
31. HOWIE, D. S. "A Comparison of Two Methods of Factorizing Test Data." *British Journal of Statistical Psychology* 7: 31-36; May 1954.
32. JONES, P. E. "The High School Success of Opportunity Class Children." *Forum of Education* (Teachers College, Sydney) 14: 48-57; October 1955.
33. KEATS, J. A. *A Statistical Theory of Objective Test Scores*. Melbourne: Australian Council for Educational Research, 1951. 48 p.
34. KEMP, L. C. D. "The Intelligence Quotient and the Problem of Its Constancy." *Forum of Education* (Teachers College, Sydney) 8: 109-25; April 1950.
35. McDONALD, J. H. "The Testing of Attainment in Basic Skills." *Education Gazette* (South Australian Education Department) 72: 132-35; April 1956.
36. McDONNELL, R. M.; RADFORD, W. C.; and STAURENGHI, P. M. *Review of Education in Australia 1948-54*. Melbourne: Australian Council for Educational Research, 1956. 363 p.
37. McILROY, B. W., and RITTER, R. "The Socio-Economic Background of Student Teachers in Victoria, 1951." (Abstract) *Journal of Education* (Victorian Institute for Educational Research) 1: 28-29; November 1954.
38. MATTHEWS, R. T. "The Teaching of Spelling." *South Australian Teachers' Journal* 5: 26-28; November 1955.
39. MEDDLETON, I. S. "Pilot Investigation into the Incidence of Backwardness and Dullness in Three Large Brisbane Schools." (Abstract) *Educational Research Being Undertaken in Australia*, 1952. No. 30. Sydney: Commonwealth Office of Education, July 1952. (Mimeo.)
40. MEYER, G. R. "Biology and General Science." *Australian Science Teachers' Journal* 2: 1-4; May 1956.
41. MEYER, G. R. "Secondary Biology Teaching in New South Wales." *Australian Journal of Science* 18: 182-88; June 1956.
42. NAY, N. R. "Distribution of Learning Time in Arithmetic." *Australian Mathematics Teacher* 8: 31-34; August-November 1952.

43. NEW SOUTH WALES TEACHERS FEDERATION. "Secondary Education Enquiry: Federation Evidence." *Education* (Journal of the Federation) 36: 5-12; September 21, 1955.
44. OESER, O. A., and EMERY, F. E. *Social Structure and Personality in a Rural Community*. London: Routledge and Kegan Paul, 1954. 279 p.
45. OESER, O. A., and HAMMOND, S. B. *Social Structure and Personality in a City*. London: Routledge and Kegan Paul, 1954. 343 p.
46. OLSON, F. J. "The Distribution of Academic Talent among the Larger Faculties of the University of Queensland in 1953." *University of Queensland Gazette* 29: 2-5; August 1954.
47. PENTONY, P. "Home Environment and Nursery School Behaviour." *Australian Journal of Psychology* 8: 61-65; June 1956.
48. PHILP, H., and CULLEN, A. "Age and Academic Success." *Forum of Education* (Teachers College, Sydney) 14: 23-27, July; 72-78, October 1955.
49. POND, L. "An Analysis of Three Basic Reading Series." *Education* (Western Australian Education Department) 3: Part 2, 13-18; November 1954.
50. QUEENSLAND DEPARTMENT OF PUBLIC INSTRUCTION. *Accommodation and Staffing in State Secondary Schools, 1955-1961*. Brisbane: the Department, 1955. (Mimeo.)
51. QUEENSLAND DEPARTMENT OF PUBLIC INSTRUCTION. *An Investigation of Methods of Teaching Reading in Infant Schools*. Bulletin No. 9. Brisbane: the Department, 1955. 45 p. (Mimeo.)
52. QUEENSLAND DEPARTMENT OF PUBLIC INSTRUCTION. *Research Findings in Arithmetic*. Bulletin No. 7. Brisbane: the Department, 1953. 10 p. (Mimeo.)
53. QUEENSLAND DEPARTMENT OF PUBLIC INSTRUCTION. *Research Findings in Reading*. Bulletin No. 10. Brisbane: the Department, 1956. 13 p. (Mimeo.)
54. QUEENSLAND DEPARTMENT OF PUBLIC INSTRUCTION. *Research Findings in Spelling*. Bulletin No. 6. Brisbane: the Department, 1952. 13 p. (Mimeo.)
55. QUEENSLAND DEPARTMENT OF PUBLIC INSTRUCTION. *Research Findings on Some Fundamental Facts and Processes in Arithmetic*. Bulletin No. 3. Brisbane: the Department, 1951. 18 p. (Mimeo.)
56. QUEENSLAND DEPARTMENT OF PUBLIC INSTRUCTION. *Summary of Test Research*. Bulletin No. 12. Brisbane: the Department, 1956. 22 p. (Mimeo.)
57. RADFORD, W. C. *The Non-Government Schools of Australia*. Melbourne: Melbourne University Press for the Australian Council for Educational Research, 1953. 123 p.
58. RAYNER, S. A. *The Special Vocabulary of Civics*. Melbourne: Melbourne University Press for the Australian Council for Educational Research, 1951. 105 p.
59. ROGERS, J. J. K. "A Reply: This is Social Studies." *Educational Magazine* (Victorian Education Department) 2: 362-68; September 1954.
60. ST. ELLEN, J. J., and SHEARS, L. W. "An Experimental Course in Education for Teachers' Colleges." *Forum of Education* (Teachers College, Sydney) 12: 89-102; April 1954.
61. SANDERS, C. "University Selection: Some Psychological and Educational Factors." *Australian Journal of Psychology* 5: 118-32; December 1953.
62. SCHONELL, F. J. "Factors Underlying Curriculum Construction." *Forum of Education* (Teachers College, Sydney) 10: 82-90; April 1952. 11: 81-94; April 1953. 12: 1-15; July 1953.
63. SCHONELL, F. J. and OTHERS. "The Oral Vocabulary of the Australian Worker." (Abstract) *Educational Research Being Undertaken in Australia, 1954*. Nos. 46-47. Sydney: Commonwealth Office of Education, July 1954. (Mimeo.)
64. SPEARRITT, D. *Preparation of Test Norms Based on Victorian National Service Testing Programme, 1952-1953*. Information Bulletin No. 31. Melbourne: Australian Council for Educational Research, August 1954. 26 p. (Mimeo.)
65. SPEARRITT, D., and KEATS, J. A. *Longitudinal Comparison of IQ's Given by Intelligence Tests at Junior and Intermediate Levels*. Information Bulletin No. 28. Melbourne: Australian Council for Educational Research, June 1953. 12 p. (Mimeo.)
66. THODY, P. R. "Under Age Matriculants." *Journal of Education* (Victorian Institute for Educational Research) 2: 99-105; November 1955.
67. TURNER, I. S. "A Comparative Experiment in Examining at the Tertiary Level." *Forum of Education* (Teachers College, Sydney) 11: 16-26; July 1953.
68. UNESCO. *Compulsory Education in Australia*. Paris: UNESCO, 1951. 189 p.

69. VICTORIAN TEACHERS' UNION. "Survey of Size of Classes and Temporary Accommodation." *Teachers' Journal* (Union Journal, Victoria) 39: Part 4, 98; May 1956.
70. WALKER, A. P. "An Experiment in Pre-Testing of Spelling." *Education* (Western Australian Department of Education) 2: 44-49; July 1953.
71. WHEELER, D. K. "Factors Underlying Lack of Curriculum Construction in Australia." *Forum of Education* (Teachers College, Sydney) 11: 42-59; October 1952.
72. WHEELER, D. K. "Reading Speed of Western Australian Children." *Educand* (University of Western Australia) 2: 4-9; November 1954.
73. WHEELER, J. M. "Popularity and Status in the Adolescent Peer Group." *Educand* (University of Western Australia) 1: 80-89; November 1953.
74. WOODS, S. W. "Do Children Understand Geographical Terms?" *Education* (Western Australian Department of Education) 4: 41-46; July 1955.
75. WYETH, E. R. H. "Australian Teachers and Teaching." *Forum of Education* (Teachers College, Sydney) 10: 68-76; October 1951.
76. WYETH, E. R. H. "Changes in Habits and Tastes Associated with Ordinary Radio Programmes." (Abstract) *Educational Research Being Undertaken in Australia, 1956*. No. 52. Sydney: Commonwealth Office of Education, August 1956. (Mimeo.)
77. WYETH, E. R. H. "The Listening Habits and Tastes of Pupils in Relation to Ordinary Radio Programmes." *Visual Aids Review* (University of Melbourne) 1: 3-8; October 1952.
78. WYETH, E. R. H. "Peer Status among Australian Adolescents." *Forum of Education* (Teachers College, Sydney) 12: 40-46; July 1953.
79. WYNDHAM, H. S. "Decentralization of Education." *Journal of Education* (Victorian Institute for Educational Research) 1: 4-10; July 1954.

## Section B: New Zealand

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COMPREHENSIVE surveys of the education system appear in the *Annual Reports* of the Minister of Education. These reports present basic statistics of education at all levels, and review special administrative problems.

### Administration

Some of the more notable of the studies in administration were concerned with the provision of school buildings (42), character training in the schools (42), technical education (43), the supply of teachers (43), and the control of Maori schools (43). Estimates of the future school population have also received careful attention (41, 53).

The emergence of a system of compulsory education in New Zealand and the evolution of methods of introducing compulsory education laws (70) were analyzed by Campbell and Parkyn; the relationship between centralized and decentralized patterns of organization in New Zealand were carefully examined in a symposium on administration (57); parents' attitudes toward coeducation were surveyed (68); and Roth's biography of George Hogben (61) threw light on the character and career of the first director of education. The changing role of inspectors was assessed by Ball and Campbell (6).

### Curriculum

The work of syllabus revision committees is described in several of the *Annual Reports* of the Department of Education (41, 42, 43).

### Educational Measurement

Fieldhouse's standardization of reading tests (24, 25) and arithmetic tests has enabled national norms to be compiled; comparisons were made between New Zealand and Australian children. Spelling attainment was surveyed (62), and the fading of arithmetic skill was investigated (64). Analyses of tests administered to 18-year-olds undergoing compulsory military training enabled other comparisons to be made between the relative levels of ability and education of young people in England and New Zealand (65). Burnham (13) reported results of testing New Zealand university students with American and Australian tests of scholastic aptitude. Fitt (26) suggested certain modifications in the norms of the *Revised Stanford-Binet Scale* so that they would be applicable in New Zealand, and Fitt and Rogers (28) studied the sex factor in intelligence test scores. Walters (77) presented *Wechsler-Bellevue* test results of prison inmates. The possibility of a decline in the general level of intelligence in the community was considered by Bernardelli (12).

### **Educational Psychology**

The development of the ideal self and the growth of ideas of morality in New Zealand children were described by Havighurst and others (31). The emergence of ideas of social differentiation and their relationship to moral qualities were studied by Congalton (19) and Jeffery (33); and Parkyn (56) traced the relationship between the ethos of the English "public school" and the New Zealand high school. The relationships between ethnocentrism and factors, such as intelligence and religion, were examined by Campbell (17). The use of Thurstone's technics to measure attitudes toward aliens was demonstrated by Fitt (27), and a careful study of the degree to which attitudes toward aliens could be changed by the presentation of informative materials was made by McCreary (37). Attention was given to the influence of leisure-time activities upon the personality of young people (1, 14, 66). Temperamental components of personality (3, 4) and the influence of intelligence and certain temperamental factors upon scholastic achievement at the university were studied by Adcock (2). Ritchie used *Rorschach* material to investigate the basic personality of Maori children (59).

### **Educational Sociology**

Considerable work was done upon the educational and social effects of contacts between the Maori and the European cultures in New Zealand; cultural factors influencing the relative performance of both Maoris and Europeans on tests of intelligence also received attention (5, 76). The role of the schools in developing the Maori people was considered (43, 58). Beeby (10) made a sociological and educational analysis of the problem of building up a school system in Western Samoa. Studies of the assimilation of recent migrants from Europe were reported (30, 78). Congalton (20) and Congalton and Havighurst (21) investigated the social status of different occupations and compared the New Zealand and English rankings of the same groups of occupations.

### **Guidance and Counseling**

The growth of psychological services was reviewed by Hunter (32) and Winterbourn (83). Beaglehole (7) and Beaglehole and Ferguson (8) made a careful study of factors causing mental ill-health in New Zealand and showed the need for guidance services.

### **Mental and Physical Development**

The New Zealand Department of Health (48) reported that striking increases in the height and weight of children at all ages from 6 to 15 years took place in the two decades between 1934 and 1954. An important

biometrical study of the eruption of permanent teeth was made by Leslie (34), and the incidence of physical defects among high-school pupils received some attention (9).

White (79) produced a penetrating study of the influence of literature upon the mental growth of a child from age two to five. Campbell reported on the emergence of heterosexual interests in early adolescence (15), and on the influence of age upon social acceptability (16). Reports on personality change after frontal lobe surgery were presented by Rogers (60).

### **Language Arts, Fine Arts, Natural Sciences, and Mathematics**

The various stages thru which skill in different aspects of written composition develops were investigated by Ford (29). The teaching of mathematics to high-school pupils of average ability was analyzed by Murdoch (40), and Coe and Coe (18) showed how the expressive values of children's art can be carried thru to adolescence.

### **Research Methods**

At the Uppsala Symposium on Psychological Factor Analysis in 1953 (74), which marked an important step forward in the field of factor analysis, Whittle (80) presented a method of estimating in one stage both the loadings of the factors in tests and the factor values possessed by the people tested.

### **Special Programs**

Not enough research has been carried out in any one special area for trends to be noted; nevertheless, several significant investigations have been made. In the field of rural education, the problems of consolidating small primary schools were carefully studied by Parkyn (55), a historical account of efforts to define the problems of agricultural education was produced by Wild (82), and the problems of the small rural high school were elucidated by Thom (67).

Higher education has been much concerned with the future requirements of various professions; e.g., medicine (73), engineering (50), and architecture (51). Dick and others (23) analyzed the academic record of science graduates. The method of accrediting high-school students for entrance to the university came under review (71, 72, 81), and the work of extramural students was assessed (75). The provision of residential halls for students was examined by Turner (69).

The needs and the care of crippled children (63), the mentally defective (46), the emotionally maladjusted (49), and children with speech defects (22) received considerable attention; and many aspects of delinquency were the subject of inquiry (11, 35, 36, 38, 39, 44, 52, 54).



## Teacher Personnel

A considerable body of unpublished material relating to the appointment and the training of teachers was summarized in the reports of Consultative Committees (45, 47); the *Annual Reports* of the Minister of Education provide much information relating to the problems of the grading and appointment of teachers (41, 42).

## Bibliography

1. ADAMS, RAYMOND S. "Children Out of School." *New Zealand Bulletin of Psychology* 2: 21-39; March 1956.
2. ADCOCK, CYRIL J. *Intelligence and High Level Achievement*. Publications in Psychology, No. 1. Wellington: Victoria University College, Department of Psychology, 1952. 27 p.
3. ADCOCK, CYRIL J. "A Note on the Factorial Analysis of Sheldon's Personality Traits." *Australian Journal of Psychology* 4: 149-65; December 1952.
4. ADCOCK, CYRIL J., and OTHERS. "An Analysis of Maori Scores on the Wechsler-Bellevue." *Australian Journal of Psychology* 6: 16-29; June 1954.
5. BALL, DOUGLAS G. "Education of the Maori." *Educational Leadership* 10: 53, 55, 57, 59; October 1952.
6. BALL, DOUGLAS G., and CAMPBELL, ARNOLD E. "Changing Role of the Inspectorate." *New Era* 36: 189-92; November 1955.
7. BEAGLEHOLE, ERNEST. *Mental Health in New Zealand*. Wellington: New Zealand University Press, 1950. 138 p.
8. BEAGLEHOLE, ERNEST, and FERGUSON, JAMES. "Report from New Zealand." *Nervous Child* 8: 508-18; October 1950.
9. BEDGOOD, LEO R. *Health Education: A Programme for Secondary Schools*. Auckland: Watterson and Roddick, 1950. 57 p.
10. BEEBY, CLARENCE E. *Report on Education in Western Samoa*. Wellington: Department of Island Territories, 1954. 40 p.
11. BENNETT, EILEEN A. "A Study of Fifty Problem Families." *New Zealand Child Welfare Worker's Bulletin* 3: 43-53; May 1953. (Mimeo.)
12. BERNARDELLI, BETTY G. "The Decline of Intelligence in New Zealand." *Population Studies* 4: 200-208; September 1950.
13. BURNHAM, PAUL S. *Entrance to a University College*. Christchurch: Canterbury University College, 1955. 38 p.
14. CAMPBELL, WILLIAM J. "The Periodical Reading of Dunedin Secondary School Pupils." *New Zealand Bulletin of Psychology* 2: 87-106; March 1956.
15. CAMPBELL, WILLIAM J. "The Preferences of Children for Others of the Same or Opposite Sex." *Australian Journal of Psychology* 7: 45-51; June 1955.
16. CAMPBELL, WILLIAM J. "The Social Adaptability of Over-Age and Under-Age Pupils." *New Zealand Bulletin of Psychology* 1: 56-67; April 1955.
17. CAMPBELL, WILLIAM J. "Some Correlates of Ethnocentrism." *Australian Journal of Psychology* 6: 178-85; December 1954.
18. COE, F. JOAN, and COE, JAMES B. "Art in Post-Primary Schools." *Education* (New Zealand) 3: 28-32, March; 42-49, May 1950.
19. CONGALTON, ATHOL A. *Social Class Consciousness in Adolescents*. Publications in Psychology, No. 3. Wellington: Victoria University College, Department of Psychology, 1952. 109 p.
20. CONGALTON, ATHOL A. "Social Grading of Occupations in New Zealand." *British Journal of Sociology* 4: 45-59; March 1953.
21. CONGALTON, ATHOL A., and HAVIGHURST, ROBERT J. "Status Ranking of Occupations in New Zealand." *Australian Journal of Psychology* 6: 10-15; June 1954.
22. DENSEM, AILSA E. "The Treatment of Stammering." *New Zealand Speech Therapists Journal* 10: 3-11; November 1955.
23. DICK, IAN B., and OTHERS. *The Academic Record of Science Students in the University of New Zealand*. Wellington: Department of Scientific and Industrial Research, 1955. 64 p.

24. FIELDHOUSE, ARTHUR E. *Manual of Directions for the A.C.E.R. Silent Reading Tests*. Wellington: New Zealand Council for Educational Research, 1954. 24 p.
25. FIELDHOUSE, ARTHUR E. *Manual of Directions for the Oral Work Reading Test*. Wellington: New Zealand Council for Educational Research, 1952. 16 p.
26. FITT, ARTHUR B. *The Stanford-Binet Scale: Its Suitability for New Zealand*. Wellington: New Zealand Council for Educational Research, 1952. 32 p.
27. FITT, ARTHUR B. "A Study of Racial Attitudes During and after the War by the Thurstone Technique." *British Journal of Psychology* 46: 306-309; November 1955.
28. FITT, ARTHUR B., and ROGERS, CYRIL A. "The Sex Factor in the Cattell Intelligence Tests, Scale III." *British Journal of Psychology* 41: 186-92; December 1950.
29. FORD, CLARENCE T. "Developments in Written Composition During the Primary School Period." *British Journal of Educational Psychology* 24: 38-45; February 1954.
30. GILLIS, WILLIE M. *The Poles in Wellington, New Zealand: A Phenomenological Study*. Publications in Psychology, No. 5. Wellington: Victoria University College, Department of Psychology, 1954. 77 p.
31. HAVIGHURST, ROBERT J., and OTHERS. *Studies of Children and Society in New Zealand*. Christchurch: Canterbury University College, 1954. 200 p. (Mimeo.)
32. HUNTER, THOMAS A. "The Development of Psychology in New Zealand." *Quarterly Bulletin of the British Psychological Society* 3: 101-11; October 1952.
33. JEFFERY, RAYMOND J. "Social Differentiation in Young Adolescents." *New Zealand Bulletin of Psychology* 2: 40-54; March 1956.
34. LESLIE, GEOFFREY H. *A Biometrical Study of Eruption of the Permanent Dentition of New Zealand Children*. Wellington: Government Printer, 1951. 72 p.
35. LUCKOCK, JACK G. "Scholastic Retardation in the Auckland Boys' Home." *New Zealand Child Welfare Workers' Bulletin* 1: 17-21; February 1951. (Mimeo.)
36. MCCREARY, JOHN R. "Maori Age Groupings and Social Statistics." *Journal of the Polynesian Society* 64: 16-21; March 1955.
37. MCCREARY, JOHN R. *The Modification of International Attitudes: A New Zealand Study*. Publications in Psychology, No. 2. Wellington: Victoria University College, Department of Psychology, 1952. 153 p.
38. MEDLICOTT, REGINALD W. "Paranoia of the Exalted Type in a Setting of Folie a Deux: A Study of Two Adolescent Homicides." *British Journal of Medical Psychology* 28: 205-23; December 1955.
39. MORRIS, ALBERT. "Some Aspects of Delinquency and Crime." *Journal of the Polynesian Society* 64: 5-15; March 1955.
40. MURDOCH, JOHN H. *The Teaching of Mathematics in Post-Primary Schools*. Wellington: New Zealand Council for Educational Research, 1950. 181 p.
41. NEW ZEALAND DEPARTMENT OF EDUCATION. *Annual Report for the Year Ended 31 December 1953*. Appendices to the Journals of the House of Representatives, E-1, 1954. Wellington: Government Printer, 1954. 95 p.
42. NEW ZEALAND DEPARTMENT OF EDUCATION. *Annual Report for the Year Ended 31 December 1954*. Appendices to the Journals of the House of Representatives, E-1, 1955. Wellington: Government Printer, 1955. 111 p.
43. NEW ZEALAND DEPARTMENT OF EDUCATION. *Annual Report for the Year Ended 31 December 1955*. Appendices to the Journals of the House of Representatives, E-1, 1956. Wellington: Government Printer, 1956. 107 p.
44. NEW ZEALAND DEPARTMENT OF EDUCATION. *Annual Report on Child Welfare, 1955*. Appendices to the Journals of the House of Representatives, E-1, 1955. Wellington: Government Printer, 1955. 37 p.
45. NEW ZEALAND DEPARTMENT OF EDUCATION. *Appointment and Promotion of Teachers*. Report of a Consultative Committee, published as a supplement to *National Education*, July 1952. 20 p.
46. NEW ZEALAND DEPARTMENT OF EDUCATION. *Intellectually Handicapped Children*. Report of a Consultative Committee. Wellington: Government Printer, 1953. 43 p.
47. NEW ZEALAND DEPARTMENT OF EDUCATION. *Recruitment, Education and Training of Teachers*. Report of a Consultative Committee. Wellington: Government Printer, 1956. 166 p.



48. NEW ZEALAND DEPARTMENT OF HEALTH. *Annual Report 1956*. Appendices to the House of Representatives, H-1, 1956. Wellington: Government Printer, 1956. 166 p.
49. NEW ZEALAND EDUCATIONAL INSTITUTE. "Emotional Maladjustment in New Zealand School Children." Report of a Special Committee. *National Education* 33: 64-68; March 1951.
50. NEW ZEALAND GOVERNMENT. *The Education, Training, and Supply of Professional Engineers*. Report of a Consultative Committee. Appendices to the Journals of the House of Representatives, H-39, 1949. Wellington: Government Printer. 115 p.
51. NEW ZEALAND GOVERNMENT. *The Education and Training of Architects in New Zealand*. Report of a Consultative Committee. Appendices to the Journals of the House of Representatives, H-39, 1951. Wellington: Government Printer, 1951. 72 p.
52. NEW ZEALAND GOVERNMENT. *Moral Delinquency in Children and Adolescents*. Report of a Special Committee. Appendices to the Journals of the House of Representatives, H-47, 1954. Wellington: Government Printer, 1954. 78 p.
53. NEW ZEALAND GOVERNMENT. *School Population Estimates*. Appendices to the Journals of the House of Representatives, J-5, 1950. Wellington: Government Printer, 1950. 22 p.
54. O'NEILL, DAVID P. "Catholics and Delinquency." *New Zealand Child Welfare Workers' Bulletin* 2: 25-36; January 1952.
55. PARKYN, GEORGE W. *The Consolidation of Rural Schools*. Wellington: New Zealand Council for Educational Research, 1952. 151 p.
56. PARKYN, GEORGE W. "Education and Morality in New Zealand." *The Year Book of Education* 1951. London: Evans Brothers, 1951. p. 412-24.
57. PARKYN, GEORGE W., and OTHERS. *The Administration of Education in New Zealand*. Wellington: New Zealand Institute of Public Administration, 1954. 121 p.
58. POWELL, GUY. "The Maori School, A Cultural Dynamic." *Journal of the Polynesian Society* 64: 259-66; September 1955.
59. RITCHIE, JAMES E. *Basic Personality in Rakau*. Publications in Psychology, No. 8. Wellington: Victoria University College, Department of Psychology, 1956. 187 p. (Mimeo.)
60. ROGERS, CYRIL A. "Personality Changes after Frontal Lobe Surgery." *New Zealand Bulletin of Psychology* 1: 6-39; August 1954.
61. ROTH, HERBERT. *George Hogben: A Biography*. Wellington: New Zealand Council for Educational Research, 1952. 162 p.
62. SCOTT, WALTER H. "A Survey of the Spelling Attainments of 14,000 Auckland Children." *National Education* 37: 285-87; September 1955.
63. SOMERSET, H. CRAWFORD D., and KENNEDY, MILLICENT. *Bringing Up Crippled Children*. Wellington: New Zealand Council for Educational Research, 1952. 94 p.
64. STANDING COMMITTEE IN ARITHMETIC. "Fade in Arithmetic." *National Education* 37: 120-22; May 1955.
65. SUTTON, ALAN H. "Personnel Selection." *New Zealand Education Gazette* 29: 234-36; November 1950.
66. SUTTON-SMITH, BRIAN. "Traditional Games of New Zealand Children." *Folk-Lore* 44: 411-23; September 1953.
67. THOM, ALAN H. *The District High Schools of New Zealand*. Wellington: New Zealand Council for Educational Research, 1950. 139 p.
68. THOMPSON, RICHARD H. T. *Christchurch Post-Primary Schools: The Issue of Co-Education*. Christchurch: Canterbury University College, Psychology Department, 1956. 17 p. (Mimeo.)
69. TURNER, HAROLD W. *Halls of Residence*. Wellington: New Zealand Council for Educational Research, 1953. 170 p.
70. UNESCO, NEW ZEALAND NATIONAL COMMISSION. *Compulsory Education in New Zealand*. Paris: UNESCO, 1952. 130 p.
71. UNIVERSITY OF NEW ZEALAND. "Accrediting for University Entrance." Report of a Special Committee. *Minutes of Senate*, August 1950. p. 99-107.
72. UNIVERSITY OF NEW ZEALAND. Report of a Committee on Accrediting. *Minutes of Senate*, September 1953. p. 46-53.

73. UNIVERSITY OF NEW ZEALAND, Report of a Committee on the Establishment of a Second Medical School. *Minutes of Senate*, September 1953. p. 54-62.
74. UPPSALA UNIVERSITY, INSTITUTE OF STATISTICS. *Uppsala Symposium on Psychological Factor Analysis, 17-19 March 1953*. Nordisk Psykologi's Monograph Series No. 3. Stockholm: Almqvist and Wiksells, 1953. 91 p.
75. UTTING, STANLEY. "New Zealand University and Extra-Mural Study." *National Education* 33: 47-49, March; 114-16, April; 125-27, May; 193-95, June 1951.
76. WALTERS, RICHARD H. "A Comparison of the Primary Mental Abilities of Maori Children with Those of Children of European Descent." *New Zealand Bulletin of Psychology* 2: 75-86; March 1956.
77. WALTERS, RICHARD H. "Wechsler-Bellevue Test Results of Prison Inmates." *Australian Journal of Psychology* 5: 46-54; June 1953.
78. WENTHOLT, ROB. *Personality Readjustment among Migrants: A Theoretical Model*. Publications in Psychology, No. 7. Wellington: Victoria University College, Department of Psychology, 1956. 53 p.
79. WHITE, DOROTHY. *Books Before Five*. Wellington: New Zealand Council for Educational Research, 1954. 193 p.
80. WHITTLE, PETER. "On Principal Components and Least Square Methods of Factor Analysis." *Skandinavisk Aktuarietidskrift*, 1952. p. 223-39.
81. WILD, GEOFFREY V. "Accrediting for University Entrance in New Zealand." *Education News* 4: 6-9; April 1954.
82. WILD, LEONARD J. *The Development of Agricultural Education in New Zealand*. Christchurch: Canterbury University College, 1953. 63 p.
83. WINTERBOURN, RALPH. "A Review of Psychology in New Zealand." *Australian Journal of Psychology* 5: 17-27; June 1953.

## CHAPTER II

### Canada

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**T**O UNDERSTAND the nature and purpose of educational research in Canada and its organization, some knowledge of the structure of Canadian education is essential. Canada has a federal system of government, which gives some uniformity and unity politically, but in education the component parts—the provinces—reign supreme. Some exceptions do exist, such as in the case of the education of Indians (likely soon to be returned to the provinces) and of Eskimos, and a carefully exercised interest (largely financial) in vocational education. But for the most part education from kindergarten to the postgraduate level is a provincial matter, and these provincial rights are jealously guarded. Pertinent to the present discussion is the note that the federal National Research Council has no section, or even a minor division, dealing with education.

Among the 10 provinces, the organization of education is marked more by diversity than by uniformity. While this opens intriguing vistas for educational research, at the same time it imposes severe limitations upon research at a national level. For instance, some provinces (e.g., British Columbia, Manitoba) have a single public school system; other provinces (Alberta, Saskatchewan, Ontario) have what are known as Separate Schools (denominational, Roman Catholic or Protestant); one province (Quebec) has a completely dual system (Catholic and Protestant); and the newest province (Newfoundland) has a sort of fourfold system of education, with schools belonging to each of the major religious denominations. Canada has two official languages, English and French. In some provinces, however, English is the sole medium of instruction and communication at one or all school levels; in others, one system of schools may be largely French-speaking and the other largely English-speaking; in still other provinces attempts are made to use both languages as mediums of instruction and communication. As a matter of interest to those partial to historical research, in at least one province (Ontario) the schools have also in the distant past used German, Gaelic, and one or more of the several Indian languages. Ages of compulsory attendance differ; so do school terms, number of years in the complete school program (11 to 13), organization of schools (the plans include 8-5, 6-3-3, 6-2-7, 7-4, and other interesting combinations), curriculums, and numerous other features.

#### Research at the National Level

Any formal organization for educational research at the national level is, as intimated earlier, most noteworthy by its absence. The Dominion

Bureau of Statistics (operated under the Department of Trade and Commerce) does have an Education Division, which in turn has a Research Section, but by custom and regulation the efforts of the Division are directed almost entirely to the collection and publication of educational statistics. As previously noted, the National Research Council does not participate in or grant funds for educational research. Nongovernmental agencies, however, have established something of a national organization. The Canadian Teachers Federation established a small Research Division in 1953, and the Canadian Education Association (a voluntary organization of provincial educators and administrators) has for many years given research grants thru its Research Council (formerly the Canadian Council for Educational Research). The Canadian Education Association is one of three associations which in 1953 set up the National Advisory Committee on Educational Research, the other partners being the Canadian Teachers Federation and l'Association Canadienne des Educateurs de Langue Française (the Association of French Language Educators). The Canadian Education Association has also sponsored *ad hoc* research committees such as those on school health and on practical education. These arrangements by nongovernmental agencies, however, constitute more of a national headquarters than a national organization for educational research.

### Research at the Provincial Level

With but two exceptions, educational research at the provincial level is conducted largely by university departments, schools, faculties, or colleges of education. Even this is not fully developed since the tradition in many provinces has been for teacher education and other courses in education to be a function of the provincial departments of education, not of the universities. As a consequence, few provincial universities have an adequate supply of either staff or students to conduct competent educational research. The mutually highly beneficial, and necessary, interaction of graduate students in education and of educational research is too well known to need comment.

The two exceptions referred to above are the recently established (1953) Alberta Advisory Committee on Education Research (a joint venture of the University of Alberta, the provincial department of education, and the provincial associations of trustees, teachers, and parents), and the Department of Educational Research of the Ontario College of Education, University of Toronto, established 25 years ago under a grant from the Carnegie Corporation, which undertakes studies for the Ontario Department of Education. In part these are university organizations also, it will be noted.

Many provincial departments of education do have research sections or divisions, often associated with a curriculum branch. The division in the British Columbia Department of Education, known as the Division of Tests, Standards, and Research, is perhaps the biggest and best known

of these. Relatively few of these organizations, however, conduct educational research at the level recognized as desirable in other countries.

Somewhat similar in nature and function are the committees or sections of provincial and local teachers organizations, school inspectors associations, guidance officials groups, and more general associations like the Ontario Education Association (which established a Research Section in 1954). These committees and other *ad hoc* bodies are engaged largely in fact-finding studies or the collection of educational statistics and matters of a like nature, but not in what is normally termed educational research. In fact, if the definition of some authorities were used, of *pure* educational research as contrasted with *applied*, practically none of the efforts of such groups would qualify.

### Research Journals

There is no national journal of educational research. The journals of teachers and trustees organizations do carry research articles of local concern; the Department of Educational Research, University of Toronto, publishes bulletins and other research series sporadically; the new *Alberta Journal of Educational Research* is to be published quarterly; the one issue each year of the *University of Manitoba Faculty of Education Research Bulletin* has been devoted to educational research; and the Canadian Education Association from time to time publishes articles on educational research in an issue of *Canadian Education*. But to secure truly national coverage in a professional journal, a Canadian researcher would have to seek publication in one of the British or American research journals. The need for a national journal is widely recognized and rather keenly felt, but it would be difficult to establish such a journal. To provide adequately for coverage in both English and French would in itself be a problem of major proportions.

### Emphasis in Research

The major emphasis in educational research in Canada appears to be on normative surveys of intelligence, achievement, and opinions; on mental test construction and use (including adaptations of American tests); and on historical educational research. Very few major studies of an experimental type have been made, and those that have been done tend to be in unrelated fields. For the most part, the research has been done by graduate students of education desirous of completing the requirements for a higher degree. Considerable fundamental research has been done, however, in the mental and social development of young children by the staff of the Institute of Child Study of the University of Toronto. One obvious reason for the lack of more fundamental research in education is the demand for what might be more properly termed *service* activities. Many of these projects are not only highly important

but also highly confidential (so that the results cannot be published), but they leave little time for what might be deemed the more proper functions and responsibilities of those primarily engaged in educational research.

The research methods generally employed are, naturally, determined in the main by the type of study conducted. Consequently, one finds that the use of existing published mental tests in normative surveys, or the construction and use of specific types of tests, occurs frequently. Possibly even more common is the widespread and general use of questionnaires—rather seldom, unfortunately, directed to a scientifically selected sample (random or stratified) and competently followed up. Experimental studies for the most part involve equated or matched individuals, or random groups. Little evidence can be found of the use of the more complex factorial designs. The form of statistical analysis employed is for the most part equally unsophisticated. Only rarely does one encounter any analysis that goes beyond a simple *t*-test, possibly a chi-square test, or correlation analysis. Research workers seem to be largely unaware of the desirability of employing factorial types of experiments and modern methods of statistical analysis.

### **Trends in Research**

Recent developments and trends are much more encouraging. There is an increasing awareness of the need for educational research and of the need to apply the findings of educational research in the classroom. More and more, leaders speak of the need for an organized attack on educational problems at both the provincial and the national level and of the value of educational research—indeed of the dire necessity of research if we are to serve the young people best and secure value for the educational dollar. This development has been accompanied (perhaps it is more accurate to say preceded) by the professional growth of teachers to the point where they are ready to play an active part in research. A similar interest in research has also been evidenced in recent years by associations of local education authorities and by parents groups. These developments have culminated in the undertaking of a number of major Canadian research studies, examples of which are the Canadian Education Association-Kellogg Project in Educational Leadership, and the Atkinson (Ontario) and Alberta longitudinal studies of utilization of student resources. The general trend is, and has been, for pure research to be restricted to universities and for all other organizations to concentrate on practical or applied research. Fortunately, there is some evidence that this cleavage is disappearing.

### **Administration and Finance**

Major emphasis during the period has been focused on finance, not a surprising development in view of the steady increases in educational



costs. LaZerte (45) gave information on school finance for the whole Dominion, and pointed out the great disparities in ability to pay that exist among the provinces. He recommended that federal funds be distributed in such a manner that the burden of supporting a foundation program of education would be equalized thruout the Dominion. The formulas proposed were based on those propounded by American writers. Of more local interest was the study by Baird (3) who reviewed school finance in Ontario and proposed grant plans for use in that province. Again major attention was given to theory and practice in the United States.

Brehaut (6) attempted to discover the factors determining differences in school transportation costs in Ontario, while Rideout (62) investigated the statutory bases for participation by municipal councils and other local government agencies in educational affairs in Saskatchewan. Using a questionnaire to principals and teachers, a committee of the British Columbia Teachers Federation (7) investigated the prevalence of dissatisfaction with large schools in that province. Evidence of dissatisfaction with the very large schools was uncovered.

### Curriculum

Some studies were of general scope, while others were specifically related to one or more subjects of the curriculum. The Canadian Broadcasting Corporation (10), under the guidance of the Television Committee of the National Advisory Council on School Broadcasting, conducted an experiment in the classroom potentialities of television. The results showed that television programs have a definite contribution to make as a teaching aid. Collins and others (19) surveyed radio in Canadian schools to discover the strengths and weaknesses of school broadcasting in Canada. Church (13) evaluated 160 preschool institutions in Canada from the point of view of administration, equipment, staff, and programs and found that serious deficiencies existed in a large number of such institutions.

Crombie (22, 23) and Crombie and others (24) reported the results of a four-year study to determine a suitable secondary-school education for those who enter employment directly from school and made recommendations concerning practically every aspect of the school program. LaZerte (44) surveyed the requirements for high-school leaving and university entrance in the various provinces, and pointed out that the proportion of the electives to the total program varied from 30 percent to 60 percent, depending on the course selected. Renney (61) surveyed some aspects of rural and agricultural education in Canada, with the primary purpose of discovering what opinions on them were held by education officials, by farmers' representatives, and by rural people themselves. McColl (47) reported the results of a questionnaire to find out what the farm population considered were the most important principles of agricultural educa-

tion and the curriculum needs in the preparation of farm boys for occupational competence in agriculture. The specific subjects studied by other researchers included geography (35, 65), the physical and psychological conditions affecting performance in handwriting (48), Canadian history teaching in the various provinces (39, 40), physical education in Alberta (31), the value of coloring sketches as an aid in teaching religion (8), and the science curriculum in British Columbia (29).

### **Educational Measurement**

The bulk of the studies consisted of surveys of intelligence and achievement of school children (11, 18, 21, 26, 56, 57, 60, 70). Of these, possibly Partlow's comparison (57) of changes between 1933-1938 and 1952-1954, and Parker's survey (56) of reading achievement in Nova Scotia schools (using the *Gates Reading Survey*) would be of general interest. A few studies were made of external departmental examinations (20, 46, 51). Conway and Brown (20) suggested procedures for better selection at the university admission level.

Two studies of attitudes should be noted. Scarfe (64) had students check attributes of colleagues most liked and least liked, in an attempt to get at, indirectly, the attitudes of students toward academic education; he obtained teacher opinion on the same issue. No clear-cut answer was obtained. Young (74) investigated the attitudes of one section of the Canadian population toward Americans: There existed no pronounced "for-ness" nor "against-ness" among the high-school seniors used in the study.

Other, unrelated studies (2, 37, 49) were reported as abstracts of master's theses. The study by Phillips (58) was a pioneer study, for Canada, of methods of diagnosing difficulties in the fundamental operations in arithmetic.

### **Educational Psychology**

McGregor (50) investigated the relationship between the self-concept and the ideal-concept in adolescents: The relationships found were moderately high.

### **Educational Sociometry**

Two reports on theses were published: One, by Northway and Rooks (55), found that children of high sociometric status were more creative than those of low status; the other, by Northway and Detweiler (54), reported that children tended to perceive people in terms of their social value to them.

### **Guidance and Counseling**

A mine of information was reported by Crombie (22, 23) and Crombie and others (24) in a follow-up study of *Your Child Leaves School*, where-



in a two-year follow-up of students was attempted. The experiences and opinions of these former students were valuable to both counselors and counselees. Many of the factors affecting the predictive accuracy for university training of the senior matriculation examinations in Ontario were identified by Fleming (27), but he found a disappointing lack of statistical support for generalizations. Of the minor studies, Guest (33) attempted an evaluation of the system of counseling used in the Winnipeg, Manitoba, high schools; he uncovered evidence of a real need and also of a severe lack of adequate services. Clarke (15) surveyed promotion practices and policies in Alberta and found that the reasons for failure were lack of achievement, lack of motivation, and poor attitudes, the first-named being the most frequently mentioned. Roberts and Ackroyd (63) surveyed the postschool occupations of the 821 Alberta high-school students graduating in 1949; about half were subsequently enrolled in the University of Alberta. Solberg (67), in a similar type of study but at an earlier stage of the educational system, traced 1411 students of the Toronto public schools who wrote the high-school entrance examinations (abolished in 1950) in 1948. No significant relationships were uncovered, indicating that the examination was probably of little value.

### **Mental and Physical Development**

Carried out under the auspices of the Canadian Red Cross Society, a very important and carefully controlled study of the possible effects of an excellent noonday meal on physical development and on school achievement was reported by Tisdall and others (69). Altho slight differences were observed, the conclusion reached was, "It is doubtful whether any of the differences were of practical significance." No particular comments on the implications of the study for school meals in general were made. Phillips (59) reported the results of a five-year survey of the physical and mental health of a large sample of children of school age.

### **Language Arts, Fine Arts, Natural Sciences, and Mathematics**

Brother Luke (9) reported the results of a series of studies of the vocabularies of children conducted at the University of Montreal. Carrière (12) conducted one of the studies with French-speaking children attending the Separate Schools of Ontario. The interests of students in science were studied by Douchette (25) and Wilde (73). Studies of difficulties in English, including reading and spelling, were conducted by Lampard (43), Skuba (66), and Vandersteen (71). McKenzie (52) made an exhaustive survey of the teaching of English to non-English-speaking immigrants to Canada for the period 1899-1952 (which covered the major mass-immigration periods).

### Research Methods

Griffin and Seeley (32) reported the results of an experiment using group-directed discussions with children, a research method not previously used in Canada. Their findings had particular application to the field of mental health. Fowler (28) applied a measure of item conformity (or item validity) to the problem of measuring person conformity, i.e., conformity to the group pattern.

### Special Programs

Wallace (72) reported the findings of a very important experiment in nursing education, wherein the course was shortened and the nurses in training were not subject to emergency ward duty. More applicants enrolled, more nurses were graduated, and the results appeared far superior to those secured under the older type of training. Lampard (42) secured encouraging results in an experiment to improve the reading abilities of adults. Barrett (4) compared students enrolled in the two-year (terminal) and four-year courses in a commercial high school in Ontario: The terminal-course students appeared to be older and of lower learning ability.

### Teacher Personnel

The studies reported were unrelated and difficult to classify. Bowers (5) reported the results of an extensive series of investigations in his own institution on the factors affecting success in practice teaching. Keddy (41) studied the selection procedures used at the Ontario College of Education. Katz (38) investigated the opinions of graduates of the University of Manitoba regarding the teacher-education program there. Clarke (14) and Clarke and McGregor (16) studied the relationships between teachers' adjustment and teachers' attitudes toward student behavior problems (maladjusted teachers seemed to understand the students better) and between adjustment and achievement of teachers in university courses (no relationship of practical significance was found).

Aikenhead (1) surveyed the attitudes expressed by young people toward teaching as a career, and Clarke and Pilkington (17), by questionnaire, endeavored to determine why teaching is chosen as a career. Gray (30) attempted to find criteria, methods, and devices which would assess a teacher's abilities in the school and in the community. Hardy (34) evaluated the *Minnesota Teacher Attitude Inventory* for use in Manitoba and found encouraging results. Johnson (36) traced changes in the concept of discipline and in pupil-teacher relations in British Columbia. Stein (68) found that prospective teachers with college degrees do not differ significantly from other college graduates in scholastic aptitude and academic success. Murray (53) tried to identify the annoyances and frustrations which cause Alberta teachers to quit teaching. The males apparently

quit because salaries were too low and prestige was inadequate; and the single females, because of a heavy work load, lack of equipment and facilities, and poor living accommodation.

### Summary

The experience gained in the development of research in Canada may be of more interest and value to researchers elsewhere than the actual findings referred to above. The absolute necessity of national avenues for publication is very evident in Canadian experience. Attention may be drawn to the apparent relationship between volume of research and ready access to mediums for dissemination of research findings.

This reviewer feels that researchers in other countries could with profit become acquainted with the findings of at least the following studies done in Canada: Canadian Broadcasting Corporation (10), Collins and others (19), Conway and Brown (20), Crombie (22, 23), Crombie and others (24), LaZerte (45), McKenzie (52), Phillips (58, 59), Renney (61), Tisdall and others (69), Wallace (72), and Young (74).

### Bibliography

1. AIKENHEAD, J. D. "Attitudes Expressed by Young People on Teaching as a Career." *University of Manitoba Faculty of Education Research Bulletin* No. 17, December 1953. p. 51-52.
2. ARNOLD, RUDOLPH M. "An Analysis of the Accident Records and Driving Characteristics of Youthful Manitoba Motor Vehicle Operators." *University of Manitoba Faculty of Education Research Bulletin* No. 16, December 1952. p. 47-48.
3. BAIRD, NORMAN B. *Educational Finance and Administration for Ontario*. Bulletin No. 14. Toronto, Ont.: Ontario College of Education, Department of Educational Research, 1952. 39 p.
4. BARRETT, HARRY O. "Differences in Intelligence Between Two- and Four-Year Course Pupils in a Commercial High School." *Journal of Educational Research* 44: 143-47; October 1950.
5. BOWERS, HENRY. *Research in the Training of Teachers*. Toronto, Ont.: J. M. Dent and Sons, 1952. 167 p.
6. BREHAUT, WILLARD. *A Survey of Factors Related to Variations in the Cost of Transportation of Elementary and Secondary School Pupils in Ontario, 1953-54*. Information Series No. 1. Toronto, Ont.: Ontario College of Education, Department of Educational Research, 1956. 85 p.
7. BRITISH COLUMBIA TEACHERS FEDERATION. *Report of Committee on Large Schools*. Vancouver, B. C.: the Federation (1644 W. Broadway), 1953. 24 p.
8. BROTHER GRÉGOIRE. *La Valeur du Coloriage des Croquis en Pédagogie Catéchistique* (The Value of Coloring Sketches as an Aid in Teaching Religion). Bulletin No. 10. Montreal, Que.: University of Montreal, Institut Pédagogique Saint-Georges, 1950. 80 p.
9. BROTHER LUKE. "Research on the Vocabulary of Children." *Canadian Education* 8: 44-47; December 1952.
10. CANADIAN BROADCASTING CORPORATION. *Television in the Classroom: Report of a Canadian Experiment*. Ottawa, Ont.: the Corporation, 1954. 63 p.
11. CARMICHAEL, ANNE, and REES, ROBERT E. "A Survey of Reading Achievement in Alberta Schools." *Alberta Journal of Educational Research* 1: 18-34; March 1955.

12. CARRIÈRE, LAURIER. *Le Vocabulaire Français des Écoliers Franco-Ontariens* (The French Vocabulary of French-Speaking Pupils in Ontario). Bulletin No. 11. Montreal, Que.: University of Montreal, Institut Pédagogique Saint-Georges, 1952. 112 p.
13. CHURCH, E. J. M. "An Evaluation of Preschool Institutions in Canada." *Canadian Education* 5: 14-47; June 1950.
14. CLARKE, S. C. T. "The Effect of Teachers' Adjustment on Teachers' Attitudes." *Canadian Journal of Psychology* 7: 49-59; June 1953.
15. CLARKE, S. C. T. "Promotion Practices and Policies in Alberta Schools." *Alberta Journal of Educational Research* 1: 24-34; December 1955.
16. CLARKE, S. C. T., and MCGREGOR, J. R. "Teachers' Adjustment and Teachers' Achievement in University Courses." *Canadian Journal of Psychology* 9: 55-58; March 1955.
17. CLARKE, S. C. T., and PILKINGTON, W. "Why Teaching Is Chosen as a Career." *Alberta Journal of Educational Research* 1: 44-53; March 1955.
18. CLIMENHAGA, CLARENCE E. "A Survey of Arithmetical Achievement of Grade Eight Pupils in Alberta Schools." *Alberta Journal of Educational Research* 1: 35-48; December 1955.
19. COLLINS, KATHLEEN E., and OTHERS. *Survey of Radio in Canadian Schools: A Report of the Radio Research Project Committee*. Research Study No. 1. Ottawa, Ont.: Canadian Teachers Federation, 1956. 179 p.
20. CONWAY, C. B., and BROWN, ELLEN. "The Establishment of University Entrance Standards in Required and Optional Subjects." *Canadian Education* 11: 17-31; March 1956.
21. COUTTS, H. T., and BAKER, H. S. "A Study of the Written Compositions of a Representative Sample of Alberta Grade Four and Grade Seven Pupils." *Alberta Journal of Educational Research* 1: 5-19; June 1955.
22. CROMBIE, HUGH. "Two Years after School: A Report of the Canadian Research Committee on Practical Education." *Canadian Education* 6: 1-149; March 1951.
23. CROMBIE, HUGH. *Your Child Leaves School*. Toronto, Ont.: Canadian Research Committee on Practical Education (206 Huron St.), 1950. 127 p.
24. CROMBIE, HUGH, and OTHERS. "Better Schooling for Canadian Youth: Final Report and Recommendations of the Canadian Research Committee on Practical Education." *Canadian Education* 6: 9-30; September 1951.
25. DOUCHETTE, A. L. "Science Interest at the Junior High School Level." *University of Manitoba Faculty of Education Research Bulletin* No. 18, December 1954. p. 35-51.
26. DUNLOP, G. M.; HUNKA, S.; and ZINGLE, H. "Individual Differences in Alberta Schools." *Alberta Journal of Educational Research* 1: 5-15; December 1955.
27. FLEMING, W. G. *Factors Affecting the Predictive Accuracy of Ontario Grade XIII Results*. Bulletin No. 16. Toronto, Ont.: Ontario College of Education, Department of Educational Research, 1955. 54 p.
28. FOWLER, HANFORD M. "An Application of the Ferguson Method of Computing Item Conformity and Person Conformity." *Journal of Experimental Education* 22: 237-46; March 1954.
29. GRANTHAM, H. H. "The Science Curriculum in British Columbia with Emphasis upon the Secondary Level." *Canadian Education* 7: 59-69; September 1952.
30. GRAY, R. "Teacher Evaluation." *University of Manitoba Faculty of Education Research Bulletin* No. 18, December 1954. p. 84-85.
31. GRIERSON, KENNETH. "Physical Education in Alberta High Schools." *Alberta Journal of Educational Research* 1: 34-43; September 1955.
32. GRIFFIN, J. D., and SEELEY, J. R. "Education for Mental Health: An Experiment." *Canadian Education* 7: 15-25; June 1952.
33. GUEST, H. H. "Purpose, Method and Main Findings of Counseling in the Winnipeg Junior High Schools, September 1951." *University of Manitoba Faculty of Education Research Bulletin* No. 16, December 1952. p. 46-47.
34. HARDY, JAMES. "A Validation Study of the Minnesota Teacher Attitude Inventory in Manitoba." *University of Manitoba Faculty of Education Research Bulletin* No. 19, December 1955. p. 54-57.
35. HARPER, HILTON C. "Elementary Geography Programs in Canada and United States of America." *University of Manitoba Faculty of Education Research Bulletin* No. 18, December 1954. p. 81.

36. JOHNSON, F. H. "Changing Conceptions of Discipline and Pupil-Teacher Relations in Canadian Schools." *Canadian Education* 7: 26-37; June 1952.
37. JOYCE, CLAUDE A. "Some Factors Affecting Grade XI Chemistry." *University of Manitoba Faculty of Education Research Bulletin* No. 18, December 1954. p. 89.
38. KATZ, JOSEPH. "Graduates Evaluate a Teacher-Training Program." *University of Manitoba Faculty of Education Research Bulletin* No. 17, December 1953. p. 23-33.
39. KATZ, JOSEPH. *The Teaching of Canadian History in Canada: A Survey Study of the Teaching of Canadian History in Junior and Senior High Schools.* Winnipeg, Man.: University of Manitoba Press, 1953. 51 p.
40. KATZ, JOSEPH. "The Teaching of Canadian History in Manitoba." *University of Manitoba Faculty of Education Research Bulletin* No. 16, December 1952. p. 20-29.
41. KEDDY, J. ARTHUR. "Selection of Candidates for Entrance to the Ontario College of Education." *Canadian Education* 5: 47-59; June 1950.
42. LAMPARD, DOROTHY M. "Reading Abilities of Adults." *Alberta Journal of Educational Research* 1: 53-61; March 1955.
43. LAMPARD, DOROTHY M. "A Study of Spelling Disabilities in Grades Four, Five, and Six." *Alberta Journal of Educational Research* 1: 48-60; December 1955.
44. LAZERTE, MILTON E. "Articulation of High Schools and Universities." *Canadian Education* 8: 48-55; December 1952.
45. LAZERTE, MILTON E. *School Finance in Canada: A Report of the School Finance Research Committee, Canadian School Trustees' Association.* Edmonton, Alta.: Hamly Press, 1955. 244 p.
46. LEHMANN, I. J. "The Reliability and Item Validity of Departmental Examinations." *University of Manitoba Faculty of Education Research Bulletin* No. 18, December 1954. p. 90-91.
47. MCCOLL, A. G. "Education for Rural Boys." *Canadian Education* 6: 3-34; June 1951.
48. MACDONELL, GORDON T. "Research on Handwriting." *University of Manitoba Faculty of Education Research Bulletin* No. 19, December 1955. p. 26-33.
49. MCFARLAND, W. A. LORNE. "The Significance Given to Education on Editorial Pages of Leading Winnipeg Newspapers, 1936-50." *University of Manitoba Faculty of Education Research Bulletin* No. 19, December 1955. p. 62-63.
50. MCGREGOR, J. R. "A Study of the Self-Concept and Ideal-Concept in Adolescence." *Alberta Journal of Educational Research* 1: 5-17; September 1955.
51. MCINTYRE, WALLACE H. "A Comparative Study of Collegiate and Department of Education Examination Marks." *University of Manitoba Faculty of Education Research Bulletin* No. 16, December 1952. p. 51-52.
52. MCKENZIE, T. R. "The Teaching of English to Non-English-Speaking Immigrants to Canada." *Canadian Education* 10: 33-47; March 1955.
53. MURRAY, THOMAS H. "An Investigation into the Annoyances and Frustrations Which Cause Alberta Teachers To Quit Teaching." *Alberta Journal of Educational Research* 1: 17-34; September 1955.
54. NORTHWAY, MARY L., and DETWEILER, JOYCE. "Sociometry in Education: Children's Perception of Friends and Non-Friends." *Sociometry* 18: 221-75; December 1955.
55. NORTHWAY, MARY L., and ROOKS, MARGARET M. "Creativity and Sociometric Status in Children." *Sociometry* 18: 194-201; December 1955.
56. PARKER, TOM. "A Survey of Reading Ability in Nova Scotia Schools." *Canadian Education* 5: 72-83; September 1950.
57. PARTLOW, HUGH R. *Arithmetic and Reading Yesterday and Today: A Comparison of St. Catharine's Public School Standards 1933-38 and 1952-54.* Toronto, Ont.: Copp Clark Company, 1955. 167 p.
58. PHILLIPS, ALEXANDER J. *Discovery, Identification, and Remedial Treatment of Difficulties in the Fundamental Operations in Elementary School Arithmetic.* Bulletin No. 15. Toronto, Ont.: Ontario College of Education, Department of Educational Research, 1954. 49 p.
59. PHILLIPS, ALEXANDER J. "A Five-Year Programme in School Health Research." *Canadian Education* 5: 3-13; June 1950.

60. REID, T. JAMES, and CONQUEST, GEORGE R. "A Survey of the Language Achievement of Alberta School Children." *Alberta Journal of Educational Research* 1: 39-52; June 1955.
61. RENNEY, ARTHUR J. *Some Aspects of Rural and Agricultural Education in Canada*. Educational Research Series No. 21. Toronto, Ont.: Ontario College of Education, Department of Educational Research, 1950. 181 p.
62. RIDEOUT, E. BROCK. *Statutory Bases for Participation by Municipal Councils and Other Local-Government Agencies in the Organization, Administration, and Financing of Education in the Province of Saskatchewan*. Educational Research Series No. 24. Toronto, Ont.: Ontario College of Education, Department of Educational Research, 1952. 70 p.
63. ROBERTS, W. GLYN, and ACKROYD, A. O. "Post-School Occupations of Alberta 1949 High School Graduates with University Entrance Standards." *Alberta Journal of Educational Research* 1: 43-54; September 1955.
64. SCARFE, N. V. "Attitude of High School Students Towards Academic Education." *University of Manitoba Faculty of Education Research Bulletin* No. 18, December 1954. p. 52-63.
65. SCARFE, N. V. "Attitude Testing in Geography." *University of Manitoba Faculty of Education Research Bulletin* No. 17, December 1953. p. 71-83.
66. SKUBA, MICHAEL. "An Analysis of English Errors and Difficulties among Grade Ten Students in the Smoky Lake School Division." *Alberta Journal of Educational Research* 1: 15-24; December 1955.
67. SOLBERG, PATRICIA A. "A Survey of High School Entrance Examination Candidates." *Canadian Education* 5: 61-77; June 1950.
68. STEIN, HARRY L. "Aptitude and Achievements of Faculty Students." *University of Manitoba Faculty of Education Research Bulletin* No. 17, December 1953. p. 13-22.
69. TISDALL, F. F., and OTHERS. *The Canadian Red Cross Society's School Meal Study, 1947-1949*. Toronto, Ont.: Canadian Red Cross Society, 1952. 146 p.
70. TURNER, GORDON H., and PENFOLD, D. J. "The Scholastic Aptitude of the Indian Children of the Caradoc Reserve." *Canadian Journal of Psychology* 6: 31-45; March 1952.
71. VANDERSTEEN, BERTHA A. "A Study of the Reading Problems of Two Grade Seven Classes in a Winnipeg School." *University of Manitoba Faculty of Education Research Bulletin* No. 16, December 1952. p. 50-51.
72. WALLACE, WILLIAM S. *Report on the Experiment in Nursing Education of the Atkinson School of Nursing, the Toronto Western Hospital, 1950-55*. Toronto, Ont.: University of Toronto Press, 1955. 27 p.
73. WILDE, N. W. "Science Interest Amongst Junior and Senior High School Students." *University of Manitoba Faculty of Education Research Bulletin* No. 18, December 1954. p. 76-80.
74. YOUNG, J. E. M. "A Study in the Measurement of the Expressed Attitude of English-Speaking Canadian High School Seniors Toward Americans." *Canadian Education* 7: 43-59; September 1952.

### Addresses

For the two Canadian periodicals listed frequently:

*Alberta Journal of Educational Research*: The Director, Faculty Committee on Educational Research, Faculty of Education, University of Alberta, Edmonton, Alta.  
*Canadian Education*: Canadian Education Association, 206 Huron St., Toronto, Ont.

For the Bulletin listed frequently, which is issued only in December:

*University of Manitoba Faculty of Education Research Bulletin*: Faculty of Education, University of Manitoba, Winnipeg, Man.



## CHAPTER III

### French-Speaking Countries: Belgium, France, Switzerland

FERNAND A. HOTYAT

**O**BJECTIVE educational research in French-speaking European countries (France itself and the French regions of Belgium and Switzerland) has been conducted mainly by laboratories or experimental schools attached to institutes of higher education. It would seem, however, that the authorities are coming to appreciate the scientific concept of teaching. After the war, the French Ministry of National Education set up a *Service de la recherche pédagogique*; Belgium established the less ambitious *Commission consultative universitaire de pédagogie*; and for some time past the *Ecole Expérimentale du Mail* has worked in conjunction with the Geneva educational institutions and authorities.

By and large, however, educational research has been initiated by research centers rather than by authorities or the teaching profession; both groups still often favor intuitive instruction over experimental teaching.

These facts explain the diversity of the subjects treated. Several common trends emerge from what has been done in recent years: There has been a preoccupation with backwardness in school and, in this connection, with questions concerning attainments in reading and spelling which are the most frequent causes of failure at the primary level; some research is beginning to make use of sociometric methods; and finally, certain experimental investigations have produced practical educational results, chiefly in the form of textbooks.

Until recently, research centers were isolated, but since 1953, annual meetings have taken place which may soon lead to the establishment of an organized unifying body. In addition, the French *Service de la recherche pédagogique* has founded a periodical, the *Courrier de la recherche pédagogique* (12), which gives an account of plans and experiments.

In Belgium, since 1951, Plancke of the University of Ghent has been publishing, under the title *Paedagogica Belgica* (74), regular lists of educational studies appearing in Belgium along with the subjects of university theses. Under the direction of Buyse, the *Laboratoire de Pédagogie Expérimentale* of the University of Louvain started to issue in 1955 a series entitled *Documents de Psychologie Scolaire*. Finally, the Swiss National Commission for UNESCO, with UNESCO's assistance, organized a regional seminar which enabled delegates from 15 European countries to consider their programs, their ideas, and their achievements. A general report was prepared by Dottrens (32).

## Administration

The most vital questions have concerned the extension of compulsory education and the direction to be taken by post-primary studies. As far as Belgium is concerned, opinion now favors the principle of a supplementary one- or two-year period. In 1952, a public opinion poll (49) showed 77.86 percent in favor of such extension and 15.75 percent against. Moreover, an inquiry carried out by the School of Sociology in Liège University (16) which surveyed all children who had completed the sixth primary year<sup>1</sup> between 1945 and 1949 showed that 70 percent of them continued their studies in various types of schools. But in France and in Belgium agreement is far from having been reached as to the new structure which should be given to education. An inquiry carried out by the *Centre régional de documentation pédagogique de Rennes* (12) revealed that many teachers favored the creation of a common group of prespecialization classes resembling the American junior high schools; but, against this, it would seem that public opinion is far from agreeing to this reform. Thirty percent of the persons questioned during a poll carried out in Belgium wanted the same instruction for one and all while 62 percent wanted specialized teaching from age 12 on (49).

De Coster (21, 22), director of a school group comprising a thousand pupils ranging from six to 21 years of age, set out the principles and the results of transforming the school atmosphere on a democratic basis. His system comprises a preparatory stage for pupils from six to 14, self-government thru class committees from 14 to 18 years and, over 18, collaboration with the school authorities and the teaching staff, the shouldering of individual responsibility and social service. A council of seniors endeavors to preserve the school spirit; teachers elect an administrative board which cooperates with the directors.

## Curriculum

During the last five years there have been relatively few objective activities primarily devoted to examining study programs. Some research has been done, to establish the level at which such forms of speech as the pronoun, the descriptive adjective, and conjunctions may be acquired (17).

A particularly interesting investigation was undertaken simultaneously in Geneva and Brussels on knowledge of the agreement of the past participle (40, 76). It comprised three tests dealing with each of the cases and given to pupils from the sixth to the tenth year. If the cases of the past participle used alone or with the verb *être* are learned in the later years of primary school, the authors of the tests believe that the rules

<sup>1</sup> In order to standardize terminology relating to class levels, designations similar to those used in the United States have been employed thruout this article. The first year of studies groups children of six to seven; the second, seven to eight; the third, eight to nine, and so on.

governing the agreement of the past participle used with *avoir* should come up only after the sixth year of primary school.

Having checked attainments in the spelling of conjugations (75) among Geneva pupils from the fifth to the tenth year, Roller recommended a program based simultaneously on the principle of gradually increasing difficulty and on the frequency of use of verbs according to the Aristizabal scale. This work later formed the basis for publication of tables of French conjugations (77) issued under the aegis of the Geneva Department of Public Education.

Mialaret (63) drew attention to the importance of introducing qualitative ideas of comparison in arithmetic at the beginning of primary school, and Jadouille (50) published a questionnaire intended to establish whether pupils at that level have mastered these concepts. A group of secondary mathematics teachers (62) checked to what extent pupils in the sixth- to eleventh-year classes could make accurate calculations involving fractions; even at seventh-year level (where the subject has been retaught) the results were far from satisfactory. These facts raise the question of the value of such concepts in the curriculum and justify the use of practical exercises designed to consolidate the subjects taught. Mortier (70) showed drawings representing elementary geometrical forms to pupils of the sixth, seventh, and eighth years; he observed that in most cases the utilization stage was far from being reached in the sixth year and concluded that the teaching of these subjects should be postponed until after the primary level.

Mialaret (61) tested pupils from the second and third years and established the percentages for completion of single-operation problems. Questions for which the correct solution involved no more than the simple condensation of material experiences with familiar objects are readily grasped from the second year; but problems involving knowledge of certain economic or social concepts (such as profit), implying a division relationship or requiring a step back in time, were completed in only 30 to 40 percent of the cases.

### Educational Measurement

A complete survey of the increasingly important production of means of measuring educational attainments objectively is outside the scope of this chapter; moreover, since many of the tests are prepared by official bodies, they are not sold commercially but are restricted to school psychologists and vocational guidance workers.

Among the published tests the most varied range is found in spelling: Tests are available for ordinary spelling (39) at the primary level, or for grammatical spelling from the third to the ninth grades (55, 78). Bonnardel (3) has developed a reading test in French which enables an estimate to be made of the abstract verbal understanding of students

at the secondary or university level. Diagnostic arithmetic tests (86) concerned with the second to fifth years have been published for the first time in French. The examinations held at the end of the primary course are becoming progressively more objective and are taking the form of standardized batteries comprising not only intelligence tests but also graduated questionnaires to supply estimates of progress in the mother tongue and in arithmetic and sometimes providing indications of pupils' knowledge in other fields (87). The use of intelligence tests in conjunction with examinations is growing, and teachers welcome this as a safeguard against unfavorable judgments being passed on their work should school results be poor (51).

Bonnardel (4) conducted several investigations aimed at comparing results obtained by pupils in various branches; for example, the application of factor analysis enabled him to establish the emergence of a sharp distinction between the scientific and literary fields of study from the fourth lyc  e year (eighth year). Traditional examinations and tests of scholastic attainments have likewise been compared. In the selection of officer cadets, Delys (28) obtained prediction coefficients in the region of 0.6, that is to say, equal to those usually obtained from examinations and, in the case of mathematics, even higher. Gilbert (38) compared the data from tests with school results in Classes VII, VIII, and IX, obtaining prediction coefficients at least as high as those provided by examinations (about 0.5). She believed, however, that indications provided by tests facilitate a more objective analysis of the pupils' work. Bonin (2) studied the intelligence of children in the sixth year of school.

### Educational Psychology

Physical, psychological, and social data on pupils in the preparatory classes of a teacher-training school for boys were collected by De Coster and Goosens (23). These were compared with school results with a view to determining variations in educational behavior during puberty. The authors concluded that this physiological change often involved temporary maladjustment but only rarely led to serious educational disturbances.

The most extensive research in the French language was sponsored by the *Institut national d'  tudes d  mographiques de France* (48). One hundred thousand children from six to 12 years of age took Gille's nonverbal mosaic test, and scholastic, social, and family data concerning them were obtained. The results were interpreted by the authors after correction and statistical treatment. Specifically, they related variations in score to father's professional standing and local population density. The lowest average figures were found among the families of farmers and farm laborers. The average test score was lower in the case of large families. Where the father's profession had required a university training, however,

this fall was very slight, being much more marked among workers and farm laborers. Special studies were made of twins and left-handed children and the influence of these factors on their intellectual level. In the case of children obtaining the best results, the value of the tests in predicting a successful school career was analyzed.

### **Educational Sociology**

Nielsen (72) reported an experimental study of the evolution of the social sense in child activities. The children were set tasks whose satisfactory accomplishment either necessitated or was facilitated by cooperation. Four stages in behavior were noted: up to three or four years of age, a nonsocial stage in which the child is indifferent to what others are doing; from three or four to seven or eight years, a presocial stage in which the child is attracted by what others are doing but is debarred from cooperation by its egocentricity; from seven or eight to 13 or 14 years, a stage where partial but increasing efforts toward mutual adaptation are observed; finally, a stage involving the conscious organization of social activities.

The results of group or individual learning of nonsense words have also been compared (68). As a general rule, group work is more effective altho certain individuals may upset or weaken collective activity. On the other hand, the attainments of highly intelligent individuals are lessened by cooperative work.

Burstin (8) studied certain aspects of socio-moral evolution by analyzing children's expressed wishes. Socio-moral concepts are at first schematic, rudimentary, and aroused by immediate needs unrelated to the social structure. During adolescence, desires are more closely in touch with reality, and material, social, and moral factors are seen to be interdependent.

Sociometric methods have been used increasingly in recent years. After establishing individual sociograms for pupils of a secondary class (Grade IX), Mialaret (65), in particular, suggested a method of treating individuals rejected by the group and who consequently often lack self-confidence. Husquinet (46) supplemented sociometric data with a thematic apperception test given to pupils of Grades VII to IX and applied the information obtained to problems of school and family adaptation. Bastin (1) compared the results of a sociometric test with the teachers' own observations.

In Belgium, De Coster and Van der Elst (24) made a special study of the phenomenon of individuals rising in the social scale by means of education. They noted that the desire to rise in the social scale by means of education is one of the most potent factors making for social mobility and that it is most often met with in small families. It is very difficult to achieve, however, and in fact can only be achieved by very few people.

Even then it requires two, three, or four generations, in spite of the fact that contemporary society is said to be based on an open class system. The main obstacles are the lack of selectivity in primary education which raises false hopes in parents, especially as Belgian secondary education is highly selective; family finance; lack of suitable guidance; absence of a cultural background in the home where education is primarily considered as a means to future economic advantages; the pupil's psychological isolation between the mediocrity of the family environment and the higher social circles which he is seeking to enter; finally, resistance on the part of those upper classes by whom the student wishes to be accepted.

### Guidance and Counseling

School psychology services are still in the experimental stage in French-speaking countries altho the oldest has been operating since 1928 (50). For this reason there is a lack of uniform practice. Some services are simply attached to one large school, others to several institutions, while still others take the form of out-of-school advisory bodies. Similarly, their activities vary. In some cases they are confined to giving group tests on which educational guidance is based; in others they include the standardization of examinations, the discussion of educational problems with teachers, and the study of individual difficulties (50). Some centers even treat cases of maladjustment (58). The records of the *Journées internationales des centres psycho-pédagogique de langue française* (11) give some idea of the great variety of these activities.

The documentation collected by these services provided material for much research of general interest. Derivière (30) paid special attention to the vocational interests of school children.

Elsewhere (29) Derivière studied the extent to which the chief physical defects observed affect secondary-school pupils' chances of success. Various inquiries were made into methods of studying problems of affectivity and child personality by character analysis (52), graphology (27), projective technics (31), and methodical observation (34).

Van Waeyenberghe (88) used long-term checks to establish the predictive value of a general knowledge test given for guidance purposes to pupils entering secondary schools. He divided the sample at percentiles 90, 75, 50, 25, and 10 and noted that the first three years were passed successfully by 75, 25, 6, 2, and 0 percent of the pupils respectively. The only pupils completing the sixth year successfully were in the upper 25 percent. By analyzing statistical data (60), it was possible to establish the frequency of failures in each year and to define some of the factors making for backwardness such as the absence of any transition period prior to entry into primary school, unfavorable social and economic conditions in the family background (94), and unsuitable guidance at the beginning of secondary-school education (26). Some attention was given



to diagnosis and treatment of scholastic failures (53) and to handicapped children (85). Lastly, some research workers who concentrated chiefly on retarded and maladjusted children observed that their weaknesses are more evident in the field of words and abstract ideas than in the practical application of intelligence (45).

### **Mental and Physical Development**

A longitudinal study by Brunet (7), altho dealing with preschool situations, threw some light on the influence of environment on mental development during the first years of life. The author followed the evolution of children between the ages of six months and three years brought up either by intellectual families, working-class families, or paid foster mothers. All three groups consisted solely of normal, healthy children and were initially at the same average stage of development. From 12 months onwards, babies in the charge of foster mothers showed marked backwardness which the author attributed to the fact that they were left in bed so that their foster mothers could more easily proceed with their household tasks. As a result, these children received much less educational stimulus and, of course, their postural development was particularly retarded. From two years onwards, the average mental level among children of intellectual families exceeded that among working-class children even tho the latter were given just as much attention by their parents. According to Brunet, the distinction is attributable primarily to the more advantageous circumstances provided by university graduate parents, including more varied and better organized linguistic contacts, toys encouraging more activity on the part of the child, and wider human relationships.

A certain amount of detailed research has been conducted into the evolution of thought processes and the formation of concepts (10), criteria for the classification of objects (89), comparison and abstraction (84), and the influence of earlier patterns on the thought structure of children and adolescents (25).

Much research has been carried out on drawing. Naville (71), going back to its origins, believes that line first grew out of the splash of color, while Zazzo (92) studied the relationship between the graphic gesture and the structuring of space. Boussion-Leroy (6) noted attempts at perspective during the transitional years and studied the extent to which intellectual backwardness in children is linked to the persistence of traces of "transparency" in drawing.

The most recent works of Piaget and Inhelder aim at discovering how, genetically, human thought introduces a certain order into the multiplicity of phenomena and events. Their work plan is similar to that of their previous work: Experiments often of a most ingenious kind are followed by an interview based on clinical methods, leading the individual to explain the phenomenon and foresee the results of future experiments

and establish a law. A first book (73) studied the way in which children acquire the concept of chance and seek an explanation if any given result recurs constantly. A second publication (47) set out to examine the different stages in the establishment of laws and the determination of causes in the case of the most complex mechanical, physical, or chemical problems.

Motion pictures received considerable attention from research workers, who studied the way in which screen situations are interpreted by children of kindergarten age (90) as well as by older children (41). The influence of the cinema on children and adolescents was examined (43). A vast inquiry, directed by Zazzo and Zazzo (91), was undertaken by the International Children's Center, in cooperation with the *Institut de Filmologie* of the University of Paris. It was conducted in connection with an international competition for children's recreational films during which 50 films were viewed at 120 screenings by 1473 schoolboys and schoolgirls. The films were sifted out progressively in accordance with the votes of the children, who were then asked to defend their choice. Various methods were used to observe the children's reactions during the screening of the films. The most important conclusions as to the children's preferences were as follows: (a) With increasing age greater prestige is attached to live actor films (as opposed to cartoons). (b) The tastes of girls and boys diverge increasingly as they grow older. (c) Children, especially if interested in what is happening on the screen, pay little attention to technical aspects of a film, tho sometimes they are moved by beauty. Leroy (54) observed individually 222 children between the ages of four and 14, during the screening of a comic film, with a view to noting their interindividual relations. The frequency of such contacts rose suddenly in the seven- to eight-year-old group from an average of 3.9 to 6.1 in 22 minutes. The author of this work concentrated chiefly on the evolution of the psychological significance of these phenomena according to age, relating them to stimulation, companionship in emotional reaction, and agreement or disagreement.

Finally, some research has been conducted into the psychology of children placed in special situations. Zazzo (93) studied the intellectual level of twins, for example, and Van Roy (85) investigated the problems of handicapped children. The latter were given the *Rosenzweig* test in conjunction with a clinical examination. They were found to be less able to defend themselves but showed a greater sense of responsibility. Such children suffer most from their lack of physical freedom and future prospects. Their most frequent reactions denote chiefly a great need for affection and, in some cases, a certain aggressiveness, with domination or compensatory behavior in other fields. The author's pedagogical conclusions related mainly to the educational environment that should be built up around them. They should be treated in such a way as to give them the impression that they are normal, and should be surrounded at the same time by a healthy atmosphere of confidence and friendliness.

## Problems of Methodology

### Language Arts

Much research work has been devoted to the psychology of reading and to dyslexia, including the special difficulties encountered by dyslexics. These seem similar to those encountered by normal individuals, but they are overcome more slowly or, in some cases, not at all. With regard to the causes of these difficulties, apart from retarded intellectual development, the tendency is to blame chiefly left-handedness (37), language problems (5), and occasionally inadequate perception of time (83). Simon (81), after applying *Head's* laterality test and a form of the *Kohs-Goldstein* test, pointed out the role of space perception and the analytical relation of the written to the spoken language. Re-education may be by various methods: Certain writers recommended a semiglobal syllabic method (80), while Chassagny (15) insisted on going back to the beginning and analyzing words into letters and syllables. He also advocated the constant comparison of syllables likely to cause confusion and the acquisition of a sound knowledge of left and right.

A commission set up by the French Ministry of Education, under the direction of Gougenheim of the University of Strasbourg, produced a textbook on elementary French (66) designed to facilitate the rapid acquisition of the spoken language. This work is based on the following data: (a) a word-frequency list drawn up on the basis of 163 recorded conversations and (b) a list of important concrete terms (available vocabulary) used in special circumstances (e.g., *jacket*, *bus*) and selected from vocabulary relating to 16 centers of interest in four different regions. This list, in addition to its 1138 terms, includes the grammatical rules which an analysis of the conversations had shown to be the most important.

Simon (82), after summing up the experimental data relating to spelling, went on to study certain psychological and educational factors contributing to failure in this subject. He derived from this study the general outline of a teaching method and also published for children from the second to the sixth year of school a test in the form of a continuous dictation text which indicates separately the norms for the observance of rules, usage, and phonetics.

Certain educators concentrated on observing the efforts of children at the beginning of the secondary-school course to overcome various difficulties encountered in mastering language. Attention was drawn to the largely mechanical methods used in grammatical analysis by pupils in their first year of secondary school (13), their weakness in exercises designed to show the general understanding of a text, and the transitional stages they pass thru between grasping a literal meaning and understanding a figurative one (14).

Mathy established a basic Latin vocabulary (57) based on word frequencies in texts recommended for secondary schools and produced

from it a practical school vocabulary (56). Gal, taking Mathy's work as his starting point, and applying his own concepts of methodology, published a Latin textbook for beginners (35).

### Mathematics

The *Commission consultative universitaire belge de pédagogie* (18) endeavored to draw up an objective scale of difficulties in division in written arithmetic. On the basis of the percentages of errors in 105 operations done by 10,835 school children from the fifth to the eighth years, it suggested 21 degrees of difficulty and was also able, by means of a partial analysis of the results, to discover the most common types of errors made. Among the Commission's most significant findings was the fact that the operational technic has already been acquired by children in their fifth year where 73.4 percent had fewer than 20 percent of the problems wrong. Thirty-five percent of the errors made in division were due to technical faults in the partial subtractions and multiplications involved, 32 percent to incorrect estimates, and 15 percent to the wrong use of the zero. Only 10 percent of the mistakes made resulted from ignorance of the technic of division.

A team of educational psychologists in Paris (19) interviewed children between the ages of 11 and 13 with a view to discovering their difficulties in relation to arithmetical problems. The most common mistakes were due to a failure to understand the problem from a practical point of view and an incapacity to set down the correct mathematical relationships corresponding to its elements. Very few children were able to correct a mistake of their own accord once they had made it. After having given group problem tests to children between the ages of eight and 14, de Moraes (69) recorded some of the best and some of the weakest pupils, as shown by the test, while they thought out the solutions of problems aloud. Among the chief weaknesses characterizing those who failed to find the correct answer, she noted the syncretic reading of the text of the problem, the failure to grasp situations outside their own experience, rigid thought processes incapable of returning to the data in the event of difficulty, and lack of skill in the application of rules prematurely learned.

Mialaret (64) gave a class a questionnaire to answer before and after a traditional type of lesson on the area of a parallelogram. This traditional type lesson, with individual manipulations suggested by the teacher, was considered excellent by six competent judges. Little progress was observed, however, when the pupils were asked to apply what they had learned to actual figures. Mialaret believes that children's psychological capacities are overestimated and that they should be allowed to exercise more initiative in discovering facts for themselves.

Very little has been published recently on the teaching of mathematics by demonstration. Monavon (67) drew attention to the slow progress made by pupils in acquiring accurate vocabulary and learning symbols.

Hotyat (44) made a classified list of school children's mental difficulties in understanding and reasoning out demonstrations in arithmetic, algebra, and geometry.

### Social Studies

Inquiries in this field have produced rather disappointing results. Gal (36) asked children questions designed to show their understanding of terms (e.g., *to beat a retreat*, *to reach a majority decision*) used in history textbooks and discovered that many were not understood by the children for whom the books were intended. Civic knowledge tests (79) applied to recruits in Geneva showed a progressive falling off in knowledge as the questions moved from subjects relating to the state to those relating to local government.

A study of the results produced by the activity method of teaching history, based on the pupils' use of texts and papers of the period studied, was undertaken by Gal (36). Altho it requires much time, this method is always advantageous, provided the documents used can be understood by the children and are of sufficient general interest. The author concluded that, given a lighter curriculum, such a method of teaching history might well produce satisfactory results.

### Cultural Background

The International Children's Center recently carried out research on a vast scale to discover the results of the regular provision of the means of culture to children in isolated rural areas (59). Widespread samplings carried out in several countries had shown that school children in rural areas constantly obtained results in intelligence tests and school examinations inferior to those obtained by city children. The inquiry was designed to determine whether these poor results were due to the low cultural level of the children's cultural environment which perhaps provided too little educational stimulus. With the object of verifying this hypothesis, school children in 12 schools in the Brie region, particularly poor from the cultural point of view, were provided regularly for two years with abundant means of acquiring a cultural background: a well-stocked children's library, educational films, exhibitions, concerts, and regularly changed sets of art reproductions for the classrooms. A team of specialists had the task of making the best possible use of this material. Psychological surveys carried out before and after the experiment by the Paris Child Psychology Laboratory showed that in spite of the short time the experiment lasted, the school children "brought into contact with a wealth of new cultural material were rapidly aroused and displayed reactions similar to those of children in more favorable environments, that is to say joy at having their curiosity satisfied, pleasurable anticipation and the demand for more knowledge, and a rapidly growing awareness of the possibilities of life and the world around them." In

addition, many interesting educational studies were made of such subjects as the functioning of class libraries, children's esthetic appreciation, and the didactics of children's exhibitions.

### Research Methods

The requirements of research and of university teaching have led to a certain specialization of educational research centers, but this subdivision of work has gone on in different ways arising out of the great variety of different needs. Child psychology clinics dealing with educational questions, university centers with purely academic interests, school psychology services, official research bodies working on the improvement of educational attainments at school, and re-adaptation centers cannot readily overlook the purposes for which their work is destined. Thus scientific pedagogy was faced by several different trends. Dottrens (33) remained faithful in general to experimental education as such, according to Buyse's definition in his classical work on the subject (9), where the latter summed up the aims of the science of education as follows: the rational organization of work, the evaluation of school attainments, and pedagogical experimentation. These were the main fields in which Mialaret's research (62) sought to use more scientifically rigorous methods in order to raise the prestige of objective pedagogy in the eyes of teachers and of the authorities.

Specialists working on practical educational problems, however, tended to take a wider view of the subject. Debesse (20) believed that research of a statistical nature should be accompanied by the objective study of individual cases without going so far as to lay down a hard and fast typology. This leads at once to the association of psychological problems and data from the family environment with information of a purely educational nature. Gratiot-Alphandery (42), speaking of the work of the school psychologist, said that he must bring to his work the rigorous methods of measurement and the objectivity acquired in the laboratory; at the same time his mind must remain open to the new points of view and the new methods of reasoning which he discovers in the school. Above all, he must beware of artificial situations brought about and falsified by the exigencies of excessive experimentation. This writer believes that the value of educational experimentation would be considerably lessened were it to be dissociated from the human beings for whose benefit it exists.

De Coster and Goosens (23) endeavored to reconcile all these different positions in their theory of complementarity, according to which educational reality cannot be grasped by considering problems from a single angle. Experimental pedagogy provides the pedagogical aspect of the problem, but it must then be studied in its psychological aspects. Finally, its social aspects must not be neglected if it is to be solved satisfactorily, and the pupils' family and social circumstances must be investigated.



### Summary

The contributions to research outlined briefly here are still on a modest scale, but they reflect considerable progress, both in quality and quantity, over previous periods. The greatest weaknesses are in the field of secondary education and in the fact that, largely owing to the isolation of research bodies, there is little coordination of their work. As has been seen, contact has now been established between centers, but the authorities are not yet sufficiently convinced of the value of objective research in education to provide these bodies with the means of studying all the problems raised by the increasing desire to improve educational achievements. Nor are they prepared to take the necessary steps to make teachers aware of the value of research by reorganizing teacher-training courses, still imbued to a large extent with empirical and intuitive principles.

### Bibliography

1. BASTIN, G. "Les observations des professeurs et le test sociométrique." (The Observations of Teachers and the Sociometric Test.) *Cahiers de pédagogie et d'orientation professionnelle* (Liège). No. 1, 1951. p. 15-19.
2. BONIN, M. "Examen de l'activité intellectuelle d'enfants de classes de 6ème dans plusieurs lycées de la région parisienne." (Examination of the Intellectual Activity of Sixth Grade Children in Several Lycées of the Paris Region.) *Enfance* (Paris). 1954. p. 517-28.
3. BONNARDEL, R. "Etude expérimentale d'un test de compréhension verbale abstraite." (Experimental Study of a Test on Abstract Verbal Comprehension.) *Journal de psychologie normale et pathologique* (Paris). No. 2, 1950.
4. BONNARDEL, R. "Evolution des liaisons entre les réussites dans les diverses matières scolaires." (Evolution of the Relationships Between Successes in the Different School Subjects.) *Journal de psychologie normale et pathologique* (Paris). No. 3, 1953.
5. BOREL-MAISONNY, S. "Les troubles du langage dans les dyslexies et les dysorthographies." (Language Difficulties in Dyslexia and Dysorthography.) *Enfance* (Paris). No. 5, 1951. p. 400-44.
6. BOUSSION-LEROY, A. "Dessins en transparence et niveau de développement." (Designs in Transparency and Level of Development.) *Enfance* (Paris). Nos. 3-4, 1950. p. 276-87.
7. BRUNET, O. "Genèse de l'intelligence chez les enfants de trois milieux différents." (Beginning of Intelligence in Children of Three Different Environments.) *Enfance* (Paris). No. 1, 1956. p. 97-146.
8. BURSTIN, J. "Aspects de l'évolution socio-morale de l'enfant." (Aspects of the Socio-Moral Evolution of the Child.) *Enfance* (Paris). No. 2, 1953. p. 97-146.
9. BUYSE, R. *L'expérimentation en pédagogie*. (Experimentation in Teaching.) Brussels: Lamertin 1935.
10. CANIVET, N., and SAURÉS, N. "L'étude de la formation des concepts." (The Study of Concept Formation.) *Enfance* (Paris). No. 3-4, 1951. p. 276-87.
11. CENTRE NATIONAL DE DOCUMENTATION PÉDAGOGIQUE, PARIS. *Actes des journées internationales des centres psycho-pédagogiques de langue française*. (Acts of the International Convention of Clinics of Educational Psychology for the French Language.) 5 fascicules. 801 p.
12. CENTRE NATIONAL DE DOCUMENTATION PÉDAGOGIQUE, PARIS. *Le Courrier de la recherche pédagogique*. (The Courier of Educational Research.) Nos. 1 and 2, 1954; No. 3, 1955; No. 4, 1956.
13. CHAMBRON, H. "Quelques aspects des procès intellectuels au cours de l'analyse grammaticale chez les enfants de 6ème." (Several Aspects of the Intellectual Processes in the Course of Grammatical Analysis in Children of the Sixth Grade.) *Enfance* (Paris). No. 2, 1953. p. 167-79.

14. CHAMBRON, H., and DEJEAN, M. "Psychologie du langage: Emploi de mots au sens figuré chez les élèves de 6ème." (Psychology of the Language: Use of Words in the Figurative Sense by Children in the Sixth Grade.) *Enfance* (Paris). No. 5, 1954. p. 529-40.
15. CHASSAGNY, C. *L'apprentissage de la lecture chez l'enfant: Dyslexie, dysorthographe.* (The Learning of Reading in the Case of the Child: Dyslexia, Dysorthography.) Paris: Presses universitaires de France, 1954. 190 p.
16. COLLARD, J. *La première orientation au sortir des écoles primaires officielles.* (First Orientation on Leaving Formal Primary Schools.) Liège: Université de Liège, Séminaire de sociologie, 1951.
17. COLLINET, M. "Expérimentation en grammaire: Les notions de pronom, d'adjectif déterminatif et de conjonction à l'école primaire." (Experimentation in Grammar: The Ideas of Pronoun, Determinative Adjective and Conjunction in Primary School.) *Cahiers de pédagogie et d'orientation professionnelle* (Liège). No. 2, 1952. p. 45-48.
18. COMMISSION CONSULTATIVE UNIVERSITAIRE BELGE DE PÉDAGOGIE. *La division écrite des nombres entiers et ses difficultés.* (Written Division of Whole Numbers and Its Difficulties.) Brussels: Ministère de l'instruction publique, 1953. 64 p.
19. DABOUT, GILLE, and OTHERS. "La compréhension et le raisonnement dans les problèmes d'arithmétique chez les écoliers de 11 à 13 ans." (Comprehension and Reasoning in Arithmetic Problems in the Case of School Children 11 to 13 Years of Age.) *Enfance* (Paris). No. 5, 1952. p. 511-22.
20. DEBESSE, M. "Pédagogie curative et pédagogie expérimentale." (Therapeutic Instruction and Experimental Instruction.) *Cahiers de pédagogie expérimentale et de psychologie de l'enfant* (Neuchâtel). No. 11, 1954. p. 8-14.
21. DE COSTER, S. "Le développement du service social scolaire." (The Development of Classroom Social Service.) *Le Service Social* (Brussels). No. 1, 1952. p. 1-16.
22. DE COSTER, S. "De la participation du personnel enseignant à l'administration des écoles." (Concerning the Participation of the Teaching Personnel in the Administration of Schools.) *Le Service Social* (Brussels). No. 5, 1950. p. 203-26.
23. DE COSTER, S., and GOOSENS, G. "Les variations du comportement pédagogique pendant la puberté." (Variations in Educational Behavior During Puberty.) *Enfance* (Paris). No. 3, 1953. p. 185-248.
24. DE COSTER, S., and VAN DER ELST, G. *Mobilité sociale et enseignement.* (Social Mobility and Teaching.) Brussels: Librairie encyclopédique, 1954. 165 p.
25. DE COSTER, S., and VAN DE VELDE, A. "La fonction de schématisation: Remarques sur son évolution chez l'enfant et chez l'adolescent." (The Function of Diagramming: Notes on Its Evolution in the Child and Adolescent.) *Revue belge de psychologie et de pédagogie* (Brussels). Nos. 52-53, 1953.
26. DEJEAN, M. "Pourquoi des psychologues scolaires dans nos lycées?" (Why School Psychologists in Our Lycées?) *Enfance* (Paris). No. 5, 1954. p. 483-504.
27. DELACHAUX, S. *Écritures d'enfants, tempéraments, problèmes affectifs.* (Children's Writing, Temperaments, Affective Problems.) Neuchâtel: Delachaux and Niestlé, 1955. 172 p.
28. DELYS, L. "Examens classiques et tests d'acquisitions scolaires." (Class Examinations and Tests on School Learning.) *Revue belge de psychologie et de pédagogie* (Brussels). No. 59, 1952. p. 97-104.
29. DERIVIÈRE, R. "Les causes physiques du déficit scolaire et leur traitement." (Physical Causes of Failures in School and Their Treatment.) *Enfance* (Paris). No. 3, 1951. p. 269-76.
30. DERIVIÈRE, R. *Le contrôle des intérêts professionnels dans l'enseignement secondaire.* (Control of Professional Interests in Secondary Education.) Paris: Le travail humain, 1953. p. 1-29.
31. DERIVIÈRE, R., and VANDERGUCHT, S. "L'authenticité et les constantes dans les interprétations du Four Picture Test." (Validity and Reliability in the Interpretation of the Four Picture Test.) *Revue belge de psychologie et de pédagogie* (Brussels). No. 3, 1956. p. 19-35.
32. DOTRENS, ROBERT. *Pour l'amélioration des programmes scolaires dans l'enseignement du 1<sup>er</sup> degré.* (The Improvement of School Programs in the Teaching of the First Grade.) Geneva: Commission Nationale Suisse pour l'Unesco, 1956. 226 p.

33. DOTTRENS, ROBERT. "Qu'est-ce que la pédagogie expérimentale?" (What Is Experimental Education?) *Cahiers de pédagogie expérimentale et de psychologie de l'enfant* (Neuchâtel). No. 11, 1954. p. 5-7.
34. GAILLOT, R. *Analyse caractérielle des élèves d'une classe par leur maître.* (Character Analysis of the Pupils in a Class by Their Teacher.) Paris: Presses universitaires de France, 1952. 261 p.
35. GAL, ROGER. *Manuel de Latin: Liber Primus, classes de 6<sup>e</sup>.* (Latin Manual. First Book, Sixth Grade.) Paris: Editions O.C.D.L., 1955. *Liber Secundus* (Second Book) and *Liber Tertius* (Third Book). Paris: Editions O.C.D.L., 1956.
36. GAL, ROGER. "Recherches sur l'emploi des méthodes actives en histoire." (Research in the Use of Activity Methods in History.) *Courrier de la recherche pédagogique* (Paris). No. 2, 1954. p. 2-5.
37. GALIFRET-GRANJON, N. "Le problème de l'organisation spatiale dans les dyslexies d'évolution." (The Problem of Spatial Organization in the Dyslexias of Evolution.) *Enfance* (Paris). No. 5, 1951.
38. GILBERT, LAURE. "Une application des tests d'acquisition scolaire dans l'enseignement moyen." (An Application of Tests on School Learning in Intermediate Teaching.) *Revue belge de psychologie et de pédagogie* (Brussels). No. 73, 1956. p. 1-18.
39. GOOSENS, GÉRARD. "Une batterie de tests d'orthographe d'usage pour l'enseignement primaire." (A Set of Tests on Everyday Spelling for Primary Instruction.) *Revue belge de psychologie et de pédagogie* (Brussels). No. 57, 1952.
40. GOOSENS, GÉRARD, and ROLLER, SAMUEL. "Recherches expérimentales sur la connaissance de l'accord du participe passé à Genève et à Bruxelles." (Experimental Research in Geneva and in Brussels on Knowledge of the Agreement of the Past Participle.) *Cahiers de pédagogie expérimentale et de psychologie de l'enfant* (Neuchâtel). No. 11, 1954. p. 38-40.
41. GRATIOT-ALPHANDERY, HÉLÈNE. "L'enfant devant l'image." (The Child Confronted with the Picture.) *Bulletin de la société française de pédagogie* (Paris). 1953. p. 21-36.
42. GRATIOT-ALPHANDERY, HÉLÈNE. "Psychologie scolaire et pédagogie expérimentale." (Classroom Psychology and Experimental Education.) *Cahiers de pédagogie expérimentale et de psychologie de l'enfant* (Neuchâtel). No. 11, 1954. p. 15-18.
43. HELIER, D. "L'enfant devant les images: Influence du cinéma sur l'enfant et l'adolescent." (The Child Confronted with Pictures: Influence of the Moving Picture on the Child and the Adolescent.) *Enfance* (Paris). 1952. p. 15-26.
44. HOTYAT, FERNAND. "Les faiblesses de la pensée mathématique chez les adolescents." (Weaknesses of Mathematical Thinking in Adolescents.) *Enfance* (Paris). No. 4, 1952. p. 273-300.
45. HOTYAT, FERNAND. "Quelques considérations sur le quotient intellectuel des retardés de l'enseignement primaire." (Some Thoughts on the Intelligence Quotient of Retarded Children in Primary Education.) *Enfance* (Paris). No. 2, 1954. p. 131-38.
46. HUSQUINET, A. *L'adaptation scolaire et familiale des jeunes garçons de 12 à 14 ans d'après le test sociométrique et le test d'aperception thématique.* (Adaptation in School and Family of Young Boys Aged 12 to 14, According to the Sociometric Test and the Thematic Apperception Test.) Paris: Les Belles Lettres, 1954. 202 p.
47. INHELDER, BARBEL, and PIAGET, JEAN. *De la logique de l'enfant à la logique de l'adolescent: Essai sur la construction des structures opératoires formelles.* (From the Logic of the Child to That of the Adolescent: Essay on the Construction of Formal Operative Structures.) Paris: Presses universitaires de France, 1955. 314 p.
48. INSTITUT NATIONAL D'ÉTUDES DÉMOGRAPHIQUES DE FRANCE. *Le niveau intellectuel d'enfants d'âge scolaire.* (The Intellectual Level of Children of School Age.) Paris: Presses universitaires de France, 1950-54. 2 vols.
49. JACQUEMYNS, GUILLAUME. *La prolongation de la scolarité obligatoire.* (The Prolongation of Compulsory School Attendance.) Brussels: Institut universitaire d'information sociale et économique, 1952. 81 p.
50. JADOULLE, ANDREA. *Le laboratoire pédagogique au travail.* (The Educational Laboratory at Work.) Paris: Editions du Scarabée, 1951. 175 p.

51. KAYART, XAVIER. "Examen cantonal de fin d'études primaires et tests collectifs d'intelligence." (District Examination for the End of the Primary Grades and Group Intelligence Tests.) *Revue pédagogique* (Brussels). 1951. p. 111-17.
52. LE GALL, ANDRÉ. *Caractérologie des enfants et des adolescents à l'usage des parents et des éducateurs.* (Study of the Character of Children and Adolescents for the Use of Parents and Educators.) Paris: Presses universitaires de France, 1950. 459 p.
53. LE GALL, ANDRÉ. *Les insuccès scolaires: Diagnostic et traitement.* (Failures in School: Diagnosis and Treatment.) Paris: Presses universitaires de France, 1954. 128 p.
54. LEROY, A. "Le jeune spectateur et son entourage." (The Young Spectator and His Associates.) *Enfance* (Paris). No. 4, 1954. p. 293-316.
55. MANOUVRIER, FERNAND. "Barèmes d'orthographe grammaticale valables pour l'enseignement primaire et pour l'enseignement moyen." (Scales of Grammatical Spelling Valid for Primary and for Intermediate Instruction.) *Revue des sciences pédagogiques* (Brussels). No. 48.
56. MATHY, M. *Le carnet de vocabulaire latin.* (Latin Vocabulary Notebook.) Paris: Editions O.C.D.L. (Rue des Saints-Pères), 1952.
57. MATHY, M. *Le vocabulaire de base du latin.* (Latin Basic Vocabulary.) Paris: Editions O.C.D.L. (Rue des Saints-Pères), 1952.
58. MAUCO, G. "L'action des centres psycho-pédagogiques des établissements d'enseignement." (The Activities of Psycho-Educational Centers in Teaching Establishments.) *Courrier du centre international de l'enfance* (Paris). 1952. p. 437-46.
59. MAURETTE, M. T., and OTHERS. "Expérience sur les enfants des régions rurales isolées." (Experiments with Children of Isolated Rural Areas.) *Courrier du centre international de l'enfance* (Paris). No. 4, 1953. p. 189-208.
60. MERLET, LUCETTE. "Sondage sur la nature et les causes du retard scolaire dans les cinq premières années de la scolarité primaire." (Scrutiny of the Nature and Causes of Backwardness in School in the First Five Years of Primary School.) *Enfance* (Paris). No. 5, 1954.
61. MIALARET, G. *Enquête relative aux difficultés éprouvées par les élèves en présence de problèmes simples.* (Investigation Concerning the Difficulties Experienced by Pupils with Simple Problems.) Saint Cloud: Ecole Normale Supérieure, 1954.
62. MIALARET, G. *Nouvelle pédagogie scientifique.* (New Scientific Teaching.) Paris: Presses universitaires de France, 1954. 123 p.
63. MIALARET, G. "Recherches préliminaires à la pédagogie du calcul à l'école primaire." (Preliminary Research in the Teaching of Arithmetic in the Primary School.) *Cahiers de pédagogie expérimentale et de psychologie de l'enfant* (Neuchâtel). No. 9, 1953.
64. MIALARET, G. "Le rendement d'une leçon à l'école primaire." (The Results from a Lesson in the Primary School.) *Cahiers de pédagogie et d'orientation professionnelle* (Liège). No. 1, 1956. p. 12-25.
65. MIALARET, G. "Sociométrie et pédagogie." (Sociometry and Teaching.) *Enfance* (Paris). 1953. p. 4.
66. MINISTÈRE FRANÇAIS DE L'ÉDUCATION NATIONALE. *Le français élémentaire.* (Elementary French.) Paris: Centre national de documentation pédagogique (Rue d'Ulm), 1955. 67 p.
67. MONAVON, S. "La psycho-pédagogie de la pensée mathématique chez les adolescents." (Psycho-Pedagogy of Mathematical Thinking in Adolescents.) *Enfance* (Paris). No. 5, 1952. p. 523-33.
68. MONTMOLLIN (DE), G., and PERLMUTTER, H. V. "Apprendre en groupe: Une expérience de psychologie sociale." (Group Learning: An Experiment in Social Psychology.) *Enfance* (Paris). 1951. p. 359-76.
69. MORAES (DE), A. M. *Recherche psycho-pédagogique sur la solution des problèmes d'arithmétique.* (Psycho-Pedagogical Research on the Solution of Arithmetic Problems.) Louvain: Nauwelaerts; Paris: Vrin, 1954.
70. MORTIER, J. "L'enseignement des notions fondamentales de formes géométriques." (The Teaching of the Fundamental Ideas of Geometrical Forms.) *Revue belge de psychologie et de pédagogie* (Brussels). 117 p.
71. NAVILLE, P. "De la tache au trait." (From the Blob to the Stroke.) *Enfance* (Paris). No. 5, 1950. p. 411-34.

72. NIELSEN, R. F. *Le développement de la sociabilité chez l'enfant.* (The Development of Sociability in the Child.) Neuchâtel: Delachaux and Niestlé, 1951. 166 p.
73. PIAGET, JEAN, and INHELDER, BARBEL. *La genèse de l'idée de hasard chez l'enfant.* (The Beginning of the Idea of Chance in the Child.) Paris: Presses universitaires de France, 1951. 265 p.
74. PLANCKE, R. I. *Paedagogica Belgica.* (Education in Belgium.) Antwerp: De Sikkel. Vol. 1, 1951; Vol. 2, 1952; Vol. 3, 1953; Vol. 4, 1954; Vol. 5, 1955.
75. ROLLER, SAMUEL. *La conjugaison française: Essai de pédagogie expérimentale.* (The French Conjugation: Attempt at Experimental Education.) Neuchâtel: Delachaux and Niestlé, 1954.
76. ROLLER, SAMUEL. "Une enquête sur l'accord du participe passé." (An Investigation of the Agreement of the Past Participle.) *Bulletin officiel de l'enseignement primaire de la République et du Canton de Genève.* No. 103, 1951. p. 21-29.
77. ROLLER, SAMUEL. *Tableaux de conjugaison française.* (Tables of French Conjugation.) Geneva: Département de l'instruction publique, 1955. 99 p.
78. ROLLER, SAMUEL. *Test ortho-25* (Spelling Test 25.) Geneva: Ecole Expérimentale du Mail, 1955.
79. ROLLER, SAMUEL, and DESSOULAVY, A. "Les connaissances civiques des écoliers et des recrues." (Civic Information of School Children and of Recruits.) *Cahiers de pédagogie expérimentale et de psychologie de l'enfant* (Neuchâtel). No. 10, 1953. p. 46-60.
80. ROUNINESCO, J., and OTHERS. "Etude de 40 cas de dyslexie d'évolution." (Study of 40 Cases of Dyslexia.) *Enfance* (Paris). No. 5, 1951, p. 1-32.
81. SIMON, JEAN. "Contribution à la psychologie de la lecture." (Contribution to the Psychology of Reading.) *Enfance* (Paris). No. 5, 1954. p. 431-48.
82. SIMON, JEAN. *Psychopédagogie de l'orthographe.* (Educational Psychology of Spelling.) Paris: Presses universitaires de France, 1954. 128 p.
83. STAMBACH, M. "Le problème du rythme dans le développement de l'enfant et dans les dyslexies d'évolution." (The Problem of Rhythm in Child Development and in Dyslexias of Development.) *Enfance* (Paris). No. 5, 1951. p. 480-502.
84. SZUMAN, S. "Comparaison, abstraction et pensée analytique chez l'enfant." (Comparison, Abstraction, and Analytical Thought in the Child.) *Enfance* (Paris). No. 3, 1951.
85. VAN ROY, F. *L'enfant infirme, son handicap, son drame, sa guérison.* (The Handicapped Child, His Handicap, His Tragedy, His Cure). Neuchâtel: Delachaux and Niestlé, 1954.
86. VAN WAEYENBERGHE, ALBERT. "Diagnostic des déficiences en calcul, 2<sup>e</sup>, 3<sup>e</sup>, 4<sup>e</sup>, 6<sup>e</sup> années primaires." (Diagnosis of Deficiencies in Arithmetic, 2nd, 3rd, 4th, 6th Years in Elementary School.) *Revue des sciences pédagogiques* (Brussels), 1953.
87. VAN WAEYENBERGHE, ALBERT. *E.P. 6-O.S.*; Epreuves de connaissances pour l'orientation scolaire. (Placement Tests for Orientation in School.) Brussels: Clerebaut, 1955.
88. VAN WAEYENBERGHE, ALBERT. "Quelle est la valeur pronostique d'un test de connaissances appliqué à l'entrée de l'enseignement moyen?" (What Is the Prognostic Value of a Placement Test Given on Entrance into the Intermediate Grades?) *Revue belge de psychologie et de pédagogie.* (Brussels). No. 53, 1951. p. 4-16.
89. WALDON, H., and ASCOLI, G. "Comment l'enfant sait classer les objets." (How the Child Is Able To Classify Objects.) *Enfance* (Paris). No. 5, 1950. p. 411-34.
90. ZAZZO, B. *Le cinéma à l'école maternelle.* (The Moving Picture in the Nursery School.) Paris: Revue Internationale de Filmologie, 1952.
91. ZAZZO, B., and ZAZZO, R. "Le concours international du film éducatif pour enfants." (International Competition in Educational Film for Children.) *Courrier du Centre International de l'Enfance* (Paris). No. 5, 1954. p. 235-58.
92. ZAZZO, R. "Le geste graphique et la structuration de l'espace." (Graphic Gesture and the Structurization of Space.) *Enfance* (Paris). Nos. 3-4, 1950. p. 204-20.

93. ZAZZO, R. "Situation gemellaire et développement mental." (Twins and Mental Development.) *Journal de psychologie normale et pathologique* (Paris). No. 2, 1952.
94. ZAZZO, R., and DABOUT, M. "Nouveaux commentaires sur la progression scolaire et l'inégalité des enfants devant l'école." (New Commentaries on Advancement in School and the Inequality of Children in Regard to School.) *Enfance* (Paris). No. 5, 1954. p. 465-82.



## CHAPTER IV

### German-Speaking Countries:

#### Austria, the German Federal Republic, and German-Speaking Switzerland

MARCEL MÜLLER-WIELAND

THE revolutionary transformation of contemporary life has brought about a considerable amount of educational research in German-speaking countries. We shall limit ourselves to the consideration of some 150 works, of the 1000-odd on the subject published during and since 1950, which reflect prevailing thinking about contemporary problems of culture and the main tendencies of educational endeavor. Articles published in periodicals had to be dispensed with almost entirely.\*

#### Administration

Hylla and Wrinkle (59) prepared a survey of the school situation in Western Europe. Hylla and Kegel (58) published in English an introduction to the school situation in Germany. The permanent commission of the Ministers of Education of the Lands of the German Federal Republic released a report on the evolution of the school situation since World War II (16). Froese (31) dealt with the evolution of German legislation. Heckel (42) wrote about the legal status of German private schools. In the foreground of school policy lay the question of the merging of public schools with the professional schools, the introduction of a ninth year of public school (21, 105, 135), lowering entrance requirements for upper-level schools, and the question of the cross relations among the individual school plans (30). Regarding advanced-school and high-school reforms, the introduction of a general course of studies was requested (98). Rüegg (96) investigated the ideological and sociological presuppositions of the general course of studies and German high-school reforms. He demanded that investigators work more closely together and urged that the structure of the high school be modified. The connections between professional activity and high-school instruction were investigated by Schaefer (97). He brought to light the lack of academic professional research and knowledge. Flitner (29) urged that student associations be revived.

The organization of school activity in Switzerland was described thoroly in *The Archives for Swiss Educational Activity* (111) as well as in the yearbook, *Switzerland* (110). Bosshard (9) dealt with the legal status of

\*Nearly half of the author's original manuscript was devoted to a survey of developments in educational history and philosophy. Unfortunately the scope of this issue and limitations of space made it impossible to publish this material here. The author's original emphasis probably reflects more accurately than does this chapter the educational interests of German-speaking countries. T. A. L.

Swiss public schools. Herzfeld (45) published a report on educational activity in Switzerland. Wymann (140) reported on plans for the reorganization of the upper level of public schools in Zurich. Näf (81) wrote a valuable essay about the function of the university.

Duss (18) treated the organization and legal status of Austrian state schools. The Vienna Board of Education released an instructive report on the school situation in Vienna (137). Lang (73) examined school organization, particularly that of country schools. Pöschl and others (90) dealt with the second grade and the plans to reform it. Mayer, Meissner, and Siess (76) provided a historical survey of the development of intermediate schools for girls. A report on the problems of school construction was published in conjunction with the second Country School Congress in 1952 (72).

### Curriculum

In the effort to reorganize curriculums, three aspirations were evident: (a) a decrease in the number and a concentration of the subjects taught; (b) a new selection of subjects to meet the requirements of exemplary close-to-life and formative instruction; and (c) the creation of integrated subjectmatter areas which might serve as a basis for over-all instruction, period instruction, and group instruction.

Particular effort to arrive at integration of work was made in the case of the upper grades of public school. The plans proposed by Ebel (20) and by Kriek and Wilker (67) were aimed at achieving this result, as were the essays of Bergner (6) and Neuber (83). Hazmuka (40) drew up complexes of subjects for the first and second grades, in which the seasons contribute to the choosing of subjects. Fenzl (26) suggested weekly plans with unified themes. Lang (73) recommended that a distinction be established between essential subjects, made compulsory, and marginal subjects, which could be freely elected. Stieger (116) developed a theory of the school program for active instruction. He suggested a decrease in teaching load in order that the child's potentialities might be developed fully.

Concerning the selection of subjects, Huber and Prestel (55) insisted on giving up complete and systematic instruction. Wagenschein (131) suggested that subjects be narrowed in advanced schools.

In all curriculum planning, the tendency to replace minimum programs by more comprehensive coordinated work is apparent.

### Educational Measurement

In a noteworthy essay, Kern (62) showed that a large percentage of elementary-school pupils did not fail in school primarily thru lack of ability but because they had entered school too early. Kern's basic performance test served to determine school maturity. In Switzerland, Strebel (119) worked out a combined school maturity test. To this end, she made

use of the already tested methods of Binet-Simon, Bühner, Hetzer, Danziger, and Winkler.

Simoneit (112, 113) uttered a sharp protest against numerical evaluation of the student's work. Instead of such quantitative judgments, he advocated evaluative descriptions of the student's achievements and personality.

The Austrian Ministry of Education brought out a blank for student observation in Austrian public schools. Its purpose was to supplement test results with information about the environment, the psychic and physical constitution, and development of the child. Lang and others (74) furnished valuable directives to teachers on how to use these blanks; Spiel and Birnbaum (114) described the blank's development and use. Holzinger (53) undertook to determine the actual performance of students in a representative cross section of schools in Styria. Analysis of these statistics revealed that the students performed best in strongly structured schools. Boys proved to be better at arithmetic; girls, at spelling. The classifications established by the teachers only partly agreed with the test results.

In Switzerland, Stieger (116) drew up a written certificate, to be delivered at the conclusion of elementary schooling, providing information about the character, mental and physical development, working behavior, and special aptitudes of the student. Pally (85) made valuable suggestions concerning the cooperation of teachers, school psychologists, and parents for the purpose of selecting students.

All these proposals suffered from the fact that the schematic nature of the observation blanks made the clear understanding of fluid child behavior more difficult; the blanks did not do justice to what is specifically important in each individual student. Thomae (123) recommended dynamic and free judgment of personality on the basis of daily observation. He reacted against the schematic nature of all questionnaires.

The effect of the usual method of selection on the educative process and the mental attitude of students at all levels has not yet been investigated sufficiently from the viewpoint of psychology and educational theory. Such an investigation would no doubt bring out the necessity of revising our way of understanding and judging students.

### **Educational Sociology**

The study of sociology of education received new impetus during the past few years thru the influence of American research on the German language literature in the field. Naturally, few publications of importance have as yet appeared. The edition of Fischer's complete works (27) led to the publication of his basic remarks on the science of educational sociology and its distinction from social philosophy and social theory of education. Contributions to the sociology of school classes and work groups were made by Engelmayer (23) and Weiss (133). Weiss presented

valuable reflections on the atmosphere of the class, its sociological background, and its influence on the student's attitude. His discussion of the method of sociometric tests, sociometric computation, and sociograms is highly instructive. Finally, Beck (4) conducted interesting experimental investigations on the understanding of social problems in family and school.

### Guidance and Counseling

No comprehensive theory of guidance along the line of individual understanding and counseling of the student to help him select his course of studies and his profession has as yet been laid down altho the need for student orientation has constantly become more urgent. Monographs to date have dealt with aid to education and youth welfare, with the theory of psychological guidance, and with professional orientation.

Hanselmann (38) gave valuable advice concerning older students and young apprentices. Schulz (108) published a report on voluntary educational assistance. Zehetner (141) brought out a manual on youth welfare assistance. Becker (5) published a manual about Catholic youth assistance in Germany.

Fank (25), Hetzer (46), and Spiel and Birnbaum (114) made notable contributions in the field of mental health. Among the numerous works about professional guidance, mention must be made of the guide to professional information put out by the Vienna Rural Labor Office (70) and the professional guidance handbook for young girls by Schaeffer and others (99). A contribution on the subject of choosing a profession was made by Hoppe (54). To facilitate school and professional orientation, Arntzen (1) produced a test battery which is in part projective and in part deals with factual material. Its advantage lies in the variety of the types of tests used; its limitation, in the overemphasis of the intellectual element and in the great amount of time (7-8 hours) required to complete the tests.

### Mental and Physical Development

A good description of the development of the human body was given in Huth's outline (57) of educational anthropology. The careful elucidation of fundamental principles, the thoro theoretical presentation of the methods of anthropological measurement and description, and the introduction to the technic of anthropological judgment make this work particularly appropriate for the education of teachers.

A valuable contribution to child psychology was made by Müller-Eckhard (80). This subtle presentation made one aware of the conflicts and the blocks in the development of child life and brought to light those aspects in ideal of achievement characteristic of our time that are hostile to the child. Particularly significant were Piaget's (87, 88) experimental investigations on the conception of time and its origins in the child's universe as well as the development of the capacity to pass moral judg-

ments. On the basis of examinations and of observations of the free play of children aged six thru 12, Piaget reached interesting conclusions concerning the parallelism of moral and intellectual development. Certain aspects of the child's soul were revealed by Pfahler (86). Relying on depth psychology, Zulliger (144) investigated the child's conscience. Schaffner (100) examined the nature of the child's play and phantasy. Hetzer (47) studied the choice of toys with respect to the meaning of child play. Scheuerl (102) attempted to furnish a basic phenomenological explanation of play.

The study of adolescence received especial attention in the last few years. Busemann (14) provided a new, highly incisive treatment of the subject. The significant work of Tumlriz (129) furnished an over-all presentation of the psychology of adolescence. It sought to give a universally valid description of the process of maturing and offered interesting insights into the second spite phase, the adolescent's conquest of his personal world, and the typology and pathology of forms of maturing. Schweingruber (109) wrote a lucid treatise on the psychology of puberty.

The problem of accelerated development received the greatest amount of attention. On the basis of the investigations of Koch and Bernholdt-Thomsen, Kroh (69) saw in the attainment of maturity at an earlier age and in the acceleration of the maturation process a phenomenon characteristic of our time. Lang (71) based his request for a new type of school on the presentation of the biological-psychic and social transformations in the development of the adolescent. He saw a symptom of acceleration, particularly among well-to-do city dwellers and intellectually exigent people, in the increase in the weight and size of newborn children and in the increased speed of physical growth. He pointed to the following educational consequences: the increase of premarital sexual relations, the discrepancy between intellectual schooling and actual mode of life of the student, and wide differences in degrees of development among students of the same class. Prohaska (92) published the interesting results of the seventh Session of the International Salzburg Congress. In it, on the basis of a comparison of old and recent investigations, Viethen pointed out the increased physical growth and the accelerated sexual maturity of children in our time; he showed that the acceleration of physical development was accompanied by a slowing down of spiritual development. Using three large-scale aptitude tests applied to 13,000 adolescents from all parts of Bavaria, Viethen presented evidence that aptitude had regressed by 4 to 5 percent as compared with the prewar period and that a shift of aptitude had occurred toward the organizational-practical. Ability to understand decreased by 19 percent. In the same volume (92) Asperger reported on difficulties in concentration experienced by children; he related the difficulties to intellectual overstimulation and to overabundance of subjects taught. He also indicated that there has been a rapid increase in the number of organic cerebral ailments. The etiology of development acceleration opens important areas to future research.

### Language Arts, Fine Arts, and History

Hillebrand (52) investigated the psychology of language instruction. He furnished valuable indications about the creative synthesis of the sound structure and meaning content of language revealed by the inner form of language; valuable, too, were his comments on the change of action phases and quality phases in linguistic development. The psychological foundation of active language acquisition deserves attention. Books by Dzimirsky and Sernko (19) and Essen (24) dealt with the general methodology of native language instruction. Hugelshofer (56), Kern and Kern, (63) and Dohrmann (17) advocated using the "total" method in elementary reading instruction. New possibilities were made available for elementary reading instruction by Tille and Tille (125), who combined the synthetic and analytic reading methods, thereby avoiding the partiality of the extreme Lautie and "total" methods. Heuberger and Hofmann (48) experimented with the use of group instruction for the teaching of the mother tongue. Strobach (120) urged that linguistic instruction be adapted to the requirements of modern schools. Tille (124) and Gebhardt (34) described a method of instruction by essay writing. Winkler and Essen (138) published a comprehensive guide to German speech education. Trojan (126) drew up a study program for the art of recitation. Ulshöfer (130) published a compendium of numerous types of instruction in German.

Glinz's attempt (35) to establish a new German grammar constituted one of the most remarkable of recent publications. He sought to make clear the structure of the German language and, by way of a new approach, to come closer to the basic linguistic units of its inner form than traditional grammar has been able to do.

As for foreign language instruction, mention must be made of the modern language method evolved by Bohlen (8), Fromaigeat's penetrating technic (32) of "practice-substitution," and the interesting classical language method described by Rotter (95).

In the field of music education, the comprehensive work by Kraus and Oberborbeck (65) offered a remarkable introduction to the cultivation of individual and choral singing and to the study of music in school. Besides the sharp-flat tonality, it takes into consideration tonal church melody and the new diatonic scale; besides function-bound melody, it considers free-moving melody. Kraus and Schoch (66) undertook to evolve a new method of musical instruction. Jöde (60, 61) wrote a valuable theory of elementary music instruction. Nitsche (84) published an introduction to the nature of voice functions and an excellent book of exercises for vocal training. Stoverock (118) published a singing method based on the pentatonic scale. Teuscher's comprehensive introduction to music (122) was also based on the pentatonic system. Pontvik (91) dealt with the usefulness of musical experience in psychotherapy; Fischer (28) published a noteworthy handbook of musical education.



Heymann (50) showed the distinction between children's drawings as a form of expression of psychic growth and of artistic expression, and showed the former's specific importance in the development of the child's powers. Of interest for the psychology of drawing was the investigation on the monozygotic disposition. By analyzing the drawings of monozygotic twins, Probst showed the esthetically negative effects of this disposition (50). Schnell devised exercises in drawing and painting useful in the anthroposophic Waldorf schools (50). Meyer (78) sought to awaken understanding for free creative activity on the part of children. Herrmann (44) and Netzband and Eschen (82) made contributions to the methodology of drawing instruction in public school. Trümper (127) published a manual of art education in school.

Roth (93) investigated the attitude of fourth-grade elementary-school pupils toward history. The pupils were asked to say what they would like to hear about the past of their homeland. A wealth of answers was received and subtly interpreted.

### Mathematics and Science

Stückrath (121) investigated the development of space experience in early childhood and at school age. He made systematic use of the observation and description of experimental attempts by pupils. He succeeded in establishing interesting distinctions between the body-space and the ego-space of the small child, and the walking-space, activity-space, and comprehension of geometrical space of the child in school.

Hazmuka (41) advocated the "total" method for instruction in arithmetic. Weyrich (136) made use of activity methods of instruction. Walper (132) introduced instruction by experience into the teaching of arithmetic. Along the lines of the progressive efforts of Felix Klein, Breidenbach (11) urged that mathematical education be used to develop functional thinking. He drew up a unified program for instruction in public and more advanced schools. Gonseth (36) considered the didactic and educational foundations of mathematical instruction. He investigated the adaptation of mathematical instruction to the student's maturing process and the problem of the integration of mathematical thinking.

Zietz (142) investigated the ideas of children about physical work. He based his investigations on classroom conversations which he carried on for many years within the framework of the upper grades of a public school for boys in Hamburg. The answers were recorded after each of the conversations in order not to introduce a jarring note into the questioning procedure. This method yielded valuable results. The answers revealed typical modes of thinking about casual relations, about energy-substance concepts, and a tendency to reason by analogy. Ploetz (89) undertook similar investigations in connection with the child's interest in and understanding of living things, especially animals. This author's ideas about the evolution of nature experience and his psychological justification of biology instruction are valuable.

Stieger, Müller, and Müller (117) laid out a course of instruction in natural science designed for group teaching and block teaching. The same school of thought gave rise to a method of natural science and geography instruction discussed by Roth and others (94).

### Special Programs

Remedial and special education are receiving increasing attention. General studies were published by Busemann (15), Asperger (2), and Hanselmann (39). Heymann (51) expressed valuable ideas on remedial education. Zulliger (143), Berna (7), Stern (115), and Mayröcker (77) commented on educational difficulties. In the field of sensory deficiency, most attention was given to hardness of hearing and deafness, in particular by Baumann (3), Bosshard (10), and Fühling and Lettmayer (33). Heymann (49) wrote a study on infantilism. Gottschaldt (37), Brunner (13), Tumlriz (128), and Schneider (103, 104) discussed educational blocks and negligence. Scherpner and Trost (101) published a handbook on remedial and special educational institutions; Egg-Benes (22) also reported on the remedial schools.

### Teacher Personnel

Schohaus (107) undertook to determine motives for choosing the teaching profession. In the report on the International Congress of Salzburg in 1954, Schneider (103) portrayed the representative educator. Brezinka (12) showed the hard plight of the educator today. Wollasch (139) discussed a typology for educators. As a criterion, he used the tension curve between teacher, child, and subject. According to the place in this tension complex, the individual types became apparent. Montalta (79) asked for greater thoroughness in basic professional training, including didactics and methodology; for more emphasis on the social-educational viewpoint; for more specialized professional training; and for the postponement of candidate selection to a higher age level.

Discussion about teacher education brought forth a general demand for an extension of the training period. In the German Federal Republic, interest increased in the academic training of teachers. Weniger (134) advocated a six-semester school of education. In contrast to academic training, he rightly emphasized that teachers need a thoro development along creative lines. Löffler (75), demanded that teacher training be made into a discipline, handled along professional lines, but nonetheless in prevailing accord with standards in higher education. Helmich (43) recommended the adoption of an optional scientific subject to be studied not at the university but in the special school of education. Kroh (68) criticized the unsatisfactory relation between education in specific subjects and professional science training. Instead of the "half-solution" of the educational academies, he demanded a full course of studies at the university, with strong emphasis on social theory of education.

## Orientation in Educational Theory

The need for orientation in the field of contemporary educational ideas and organization in German-speaking countries was met by an encyclopedia of education (64). Instructive reviews of the German-language educational press are provided by references to the monographs published in the various regions.

A number of institutes and information centers, some newly created, were extremely valuable for the stimulation of research in education and for the orientation of foreign investigators.

## Summary

The efforts of educational investigators and educators in the German Federal Republic to solve the problems of teacher training and adult education deserve attention. Above all, the experience gained from the application of the *studium generale*, the high-school reform, work in the educational academies, and the improvement of public high schools are of interest.

In Austria, the broadly planned and state-directed experimental school programs, and particularly the effort to create new types of country schools, are sure to arouse the interest of the educational world. Stimulating, too, is the research in the fields of educational methodology and comparative theory of education.

In the German-speaking section of Switzerland, noteworthy efforts are being made to improve the upper grades of the public schools and to correlate and complete individual grades. Particularly momentous is the teacher-seminar reform which, in view of the cantonal differences in Swiss school life, might well yield a number of profitable lessons.

The educational efforts of the German-speaking countries show the general and urgent demand today for a deeper understanding of the educational duty of the school. This demand arises from the cultural distress of our time. Both harmonious development of personality and preparation for life in the community require a comprehensive educational and cultural policy.

## Bibliography

1. ARNTZEN, FRANZ. *Diagnostische Aufgabenreihe für Begabungsprüfungen von Heranwachsenden und Erwachsenen mit mittlerer und höherer Schulbildung.* (Series of Diagnostic Problems for Intelligence Tests of Adolescents and Adults with Middle-School and Higher-School Training.) 2. erweiterte Auflage. Stuttgart: Testverlag Siegfried Wolf, 1954. 27 p.
2. ASPERGER, HANS. *Heilpädagogik. Einführung in die Psychopathologie des Kindes für Ärzte, Lehrer, Psychologen und Fürsorgerinnen.* (Therapeutic Education. Introduction to Psychopathology of the Child for Doctors, Teachers, Psychologists, and Nurses.) Wien: Springer, 1952. 280 p.

3. BAUMANN, ADOLF. *Unser Kind ist schwerhörig.* (Our Child Is Hard of Hearing.) Bedrohte Jugend, Drohende Jugend, No. 26. Stuttgart: Ernst Klett, 1952. 63 p.
4. BECK, ROBERT. *Grundformen sozialen Verhaltens. Beiträge zur EXPERIMENTELLEN Sozialpsychologie.* (Basic Forms of Social Behavior. Contributions to EXPERIMENTAL Social Psychology.) Stuttgart: Enke, 1954. 145 p.
5. BECKER, CARL. *Handbuch der caritativen Jugendhilfe in Deutschland. Uebersicht über die Anstalten und Einrichtungen der Katholischen Jugendhilfe nach dem Stande vom 1. November 1953.* (Handbook of Charitable Children's Aid in Germany. Survey of the Institutions and Organizations of the Catholic Children's Aid as of November 1, 1953.) Freiburg im Breisgau: Lambertus, 1954. 176 p.
6. BERGNER, HERBERT. "Stoffplanentwurf für einen Gesamtunterricht auf der Oberstufe der Volksschule." (Plan of Subject Matter for Integrated Instruction in the Upper Grades of the Elementary School.) *Pädagogische Arbeitsblätter* 5: 11-20; January 1951.
7. BERNARD, JACQUES. *Erziehungsschwierigkeiten und ihre Ueberwindung.* (Educational Difficulties and Their Solution.) Bern and Stuttgart: Hans Huber, 1954. 234 p.
8. BOHLEN, ADOLF. *Methodik des neu sprachlichen Unterrichts.* (Methods of Modern-Language Instruction.) Heidelberg: Quelle and Meyer, 1953. 240 p.
9. BOSSHARD, HANS. *Die Rechtsordnung der schweizerischen Volksschule mit besonderer Berücksichtigung des Zürcherischen Rechtes. Geschichte, soziologische Grundlagen, Recht.* (The Legal Set-Up of the Swiss Elementary School with Special Reference to Zürich Law. History, Sociological Bases, Law.) Affoltern am Albis (Switzerland): Weiss, 1955. 224 p.
10. BOSSHARD, PAUL. *Der Taubstumme. Versuch einer Erfassung seiner Eigenart.* (The Deaf-Mute. Attempt at Comprehension of His Special Situation.) Zürich: Selbstverlag Paul Bosshard (Scheidegstrasse 128), 1953. 308 p.
11. BREIDENBACH, WALTER. *Methodik des mathematischen Unterrichts.* (Methods of Mathematical Instruction.) Stuttgart: Ernst Klett, 1950. 191 p.
12. BREZINKA, WOLFGANG. "Der Erzieher als Mensch der Gegenwart." (The Educator as a Man of Today.) *Erziehung als Beruf.* Bericht über die Internationale Werktagung 1954 in Salzburg. Herausgeber: Wolfgang Brezinka. Veröffentlichungen des Institutes für vergleichende Erziehungswissenschaft, Salzburg. Band 6. Wien: Oesterreichischer Bundesverlag, 1955. p. 27-43.
13. BRUNNER, JOSEF. *Schwererziehbare männliche Jugendliche im Rorschach-Formdeutversuch.* (Problem Boys in the Rorschach Form-Interpretation Test.) Arbeiten zur Psychologie, Pädagogik und Heilpädagogik. Freiburg: Universitätsverlag, 1954. 195 p.
14. BUSEMANN, ADOLF. *Einführung in die pädagogische Jugendkunde.* (Introduction to Educational Study of Youth.) 3. Auflage. Frankfurt: Moritz-Diesterweg, 1950. 289 p.
15. BUSEMANN, ADOLF. *Geborgenheit und -Entwurzelung des jungen Menschen. Beiträge zur heilpädagogischen Aufgabe unserer Zeit.* (Security and Up-rooting of the Adolescent. Contributions to the Task of Therapeutic Pedagogy of Our Times.) Ratingen: A. Henn, 1951. 92 p.
16. DEUTSCHE BUNDESREPUBLIK, STÄNDIGE KONFERENZ DER KULTUSMINISTER DER LÄNDER IN DER BUNDESREPUBLIK DEUTSCHLAND. *Zur Entwicklung des Erziehungs- und Bildungswesens in den Ländern der Bundesrepublik Deutschland.* (On the Development of the Educational System in the Countries of the German Federal Republic.) Horb am Neckar (Germany): Christian, 1954. 32 p.
17. DOHRMANN, PAUL. *Gedankliches Lesen. Theorie der Ganzheitsmethode.* (Reading for Thought. Theory of the Totality Method.) Hannover: Hahnsche Buchhandlung, 1952. 293 p.
18. DUSS, VIKTOR. *Die österreichische Pflichtschule. Die wichtigsten Gesetze, Verordnungen und Erlässe.* (The Austrian Compulsory School. The Most Important Laws, Regulations, and Acts.) 1. und 2. Teil. Graz, Wien: Leykam, 1954. 227, 170 p.
19. DZIMIRSKY, ERHARD, and SERENKO, ROBERT. *Beiträge zur Methodik des Deutschunterrichts.* (Contributions to the Methods of German Instruction.) Graz, Wien: Leykam, 1953. 163 p.

20. EBEL, WILHELM. *Gesamtunterricht in der Oberstufe. 12 Unterrichtseinheiten, das Bildungsgut des letzten Jahrgangs umfassend.* (Core Course in the Upper Grades. 12 Units of Instruction, Covering the Teaching Material of the Last Year.) Pädagogische Handbücher. Band 8. Ahlen (Germany): Sommer, 1952. 160 p.
21. EDERER, KARL A. "Das 9. Volksschuljahr." (The 9th Grade.) *Pädagogische Welt. Monatsschrift für Erziehung, Bildung, Schule* 7: 346-51; July 1954.
22. ECC-BENES, MARIA. *Die heilpädagogische Hilfsschule der Stadt Zürich. Ihre Wege und Ziele.* (The City of Zürich School for Therapeutic Education. Its Methods and Goals.) Zürich: Verlag der Schul- und Büromaterialverwaltung, 1953. 136 p.
23. ENGELMAYER, OTTO. *Schulkinder unter sich. Das Soziogramm in der MODERNEN Schule.* (School Children among Themselves. The Sociogram in the MODERN School.) Pädagogische Studienhilfen, 6. München: Christian Kaiser, 1952. 42 p.
24. ESSEN, ERIKA. *Methodik des Deutschunterrichts.* (Methods of German Instruction.) Heidelberg: Quelle and Meyer, 1956. 211 p.
25. FANK, PIUS. *Jugend im Reifen. Führungshilfen in den Reifejahren für Seelsorger, Eltern und Erzieher.* (The Adolescent. Guidance Aids During Adolescence for Ministers, Parents, and Educators.) 2. Auflage. Wien: Fährmann-Verlag, 1951. 208 p.
26. FENZL, VIKTORIA. *Die Jahresarbeit auf der 2. Schulstufe.* (The Year's Work in the Second Grade.) Herausgegeben unter Mitwirkung einer Arbeitsgemeinschaft. Wien: Verlag für Jugend und Volk, 1951. 607 p.
27. FISCHER, ALOYS. *Leben und Werk.* (Life and Work.) Herausgeber: Karl Kreitmair. Veröffentlichungen des Aloys-Fischer-Arbeitskreises, München, Band 13½. München: Bayerischer Schulbuch Verlag, 1950-54. 372, 400, 615 p.
28. FISCHER, HANS. *Handbuch der Musikerziehung.* (Handbook of Music Instruction.) Berlin: Rembrandt-Verlag, 1954. 530 p.
29. FLITNER, WILHELM. *Grund- und Zeitfragen der Erziehung und Bildung.* (Basic Problems of Today in Education.) Erziehungswissenschaftliche Bücherei, Reihe 4; Theoretische Pädagogik. Stuttgart: Ernst Klett, 1954. 175 p.
30. FLOERKE, WILHELM. *Die Auflockerung der Oberstufe. Bericht und ein Versuch zur Neugestaltung des Unterrichts der höheren Schule.* (Stirring Up the Upper Grades. Report and an Attempt at Reorganization of the Teaching in the College-Preparatory School.) Heidelberg: Quelle and Meyer, 1956. 50 p.
31. FROESE, LEONHARD. *Deutsche Schulgesetzgebung (1763-1952).* (German School Legislation (1763-1952).) Kleine pädagogische Texte. Weinheim an der Bergstrasse (Germany): Julius Beltz, 1952. 176 p.
32. FROMAIGEAT, EMILE. *Die Technik der praktischen Uebersetzung.* (Methods of Practical Translation.) Zürich: Verlag des Schweizerischen Kaufmännischen Vereins, 1955. 118 p.
33. FÜHRING, MAXIMILIAN, and LETTMAYER, OTTO. *Die Sprachfehler des Kindes und ihre Beseitigung.* (Language Mistakes of the Child and Their Correction.) Praktische Winke für Eltern, Kindergärtnerinnen und Lehrer. Wien: Oesterreichischer Bundesverlag, 1951. 103 p.
34. GEBHARDT, MICHAEL. *Deutsche Aufsätze. Anleitungen, Ausarbeitungen, Gliederungen. Themen zum Selbststudium und zur Unterweisung.* (German Composition. Directions, Composing, Organizing. Themes for Self-Study and for Instruction.) 3 Bände. München: Max Huber, 1951, 1952. 424, 247, 224 p.
35. GLINZ, HANS. *Die innere Form des Deutschen. Eine neue deutsche Grammatik.* (The Inner Form of German. A New German Grammar.) Bibliotheca Germanica, 4. Bern: A. Francke AG., 1952. 504 p.
36. GONSETH, FERDINAND. "Mathematikunterricht." (Teaching of Mathematics.) *Lexikon der Pädagogik.* Herausgegeben von Heinrich Kleinert. Bern: A. Francke AG., 1950-52. 2. Band, p. 239-55.
37. GOTTSCHALDT, KURT. *Probleme der Jugendverwahrlosung. Ein Bericht über psychologische Untersuchungen in der Nachkriegszeit.* (Problems of Juvenile Delinquency. A Report on Psychological Investigations in the Post-War Period.) Leipzig: Johannes Ambrosius Barth, 1950. 182 p.
38. HANSELMANN, HEINRICH. *Lerne Leben! Freundliche Ratschläge an ältere Schüler und junge Lehrlinge.* (Learn How To Live! Friendly Counsel for Older Pupils and Young Apprentices.) Zürich: Rotapfel, 1951. 244 p.



39. HANSELMANN, HEINRICH. *Sorgenkinder daheim, in der Schule, in der Anstalt, in der menschlichen Gesellschaft. Heilpädagogik im Ueberblick, für Eltern, Lehrer, Geistliche, Fürsorger.* (Problem Children at Home, in School, in an Institution, in Society. Survey of Therapeutic Education, for Parents, Teachers, Ministers, Guardians.) Zürich: Rotapfel, 1954. 180 p.
40. HAZMUKA, HILDEGARD. *Ganzheitlicher Unterricht in der Volksschule.* (Core-Curriculum Instruction in the Elementary School.) Wien: Oesterreichischer Bundesverlag, 1954. 175 p.
41. HAZMUKA, HILDEGARD. *Rechnen in der Volksschule nach analytisch-synthetischer Arbeitsweise.* (Arithmetic in the Elementary School Taught by Analytical-Synthetic Methods.) 2 Teile. Pädagogisch-psychologische Arbeiten des Pädagogischen Institutes der Stadt Wien 5/212. Wien: Verlag Jugend und Volk, 1953, 1955. 45, 51 p.
42. HECKEL, HANS. *Deutsches Privatschulrecht.* (German Private-School Law.) Berlin, Köln: Heymanns, 1955. 354 p.
43. HELMICH, WILHELM. *Lehrerbildung und Fachwissenschaft.* (Teacher-Training and Knowledge of Subject Matter.) Stuttgart: Ernst Klett, 1954. 52 p.
44. HERRMANN, HANS. *Zeichnen fürs Leben.* (Practical Arithmetic.) 2 Bände. Ratingen (Germany): A. Henn, 1952. 48, 96 p.
45. HERZFELD, GOTTFRIED. *Das Schweizer Erziehungswesen.* (The Swiss Educational System.) Wiesbaden: Pädagogische Arbeitsstelle, 1950. 96 p.
46. HETZER, HILDEGARD. *Das Kind wächst heran. Geistig-seelische Gesundheitsführung in Kindheit und Jugend.* (The Child Grows Up. Guidance for Mental and Spiritual Health in Childhood and Adolescence.) 5. erweiterte Auflage. Lindau: Verlag Kleine Kinder, 1955. 78 p.
47. HETZER, HILDEGARD. *Spiel und Spielzeug für jedes Alter.* (Games and Toys for Every Age Level.) 5. erweiterte Auflage. Lindau: Verlag Kleine Kinder, 1955. 127 p.
48. HEUBERGER, HUBERT, and HOFMANN, ALFRED. *Die Gruppenarbeit im muttersprachlichen Unterricht.* (Group Work in Instruction in the Mother Tongue.) 1. Teil. Craz, Wien, München: Stiasny, 1954. 36 p.
49. HEYMANN, KARL. *Infantilismus.* (Infantilism.) Psychologische Praxis. Schriftenreihe für Erziehung und Jugendpflege. Basel: S. Karger, 1955. 206 p.
50. HEYMANN, KARL, Herausgeber. *Kind und Kunst.* (The Child and Art.) Psychologische Praxis. Schriftenreihe für Erziehung und Jugendpflege, herausgegeben von Ernst Probst, 10. Basel: S. Karger, 1951. 127 p.
51. HEYMANN, KARL. *Therapeutische Erziehung.* (Therapeutic Education.) Psychologische Praxis. Schriftenreihe für Erziehung und Jugendpflege, herausgegeben von Ernst Probst, 13. Basel: S. Karger, 1953. 62 p.
52. HILLEBRAND, MAX J. *Kind und Sprache.* (The Child and Language.) 1. Teil: Grundschulalter. Psychologische Voraussetzungen des Deutschunterrichts in der Volksschule, Psychologie der Unterrichtsfächer der Volksschule. München: Kösel-Verlag, 1955. 123 p.
53. HOLZINGER, FRITZ. *Leistungssteigerung durch Leistungsmessung.* (Advance in Achievement Determined by Measurement.) Oesterreichische Schriften zur pädagogischen Psychologie für Schule, Haus und Heim. Band I, Herausgeber: Ludwig Lang and Otto Timp. Wien: Oesterreichischer Bundesverlag, 1955. 100 p.
54. HOPPE, FERDINAND. *Soll ich studieren? Ein Ratgeber für die Berufswahl der Abiturienten.* (Shall I Study? A Vocational-Guidance Counsellor for Preparatory School Graduates.) Würzburg: Triltsch, 1956. 199 p.
55. HUBER, FRANZ, and PRESTEL, JOSEF. *Unterrichtsführung und Unterrichtsgestaltung in den Volksschulfächern. Besondere Unterrichtslehre in Abrissen.* (Method of Teaching and Organization in Elementary School Subjects. Special Teaching Plan in Outline Form.) 5. erweiterte Auflage. Bad Heilbrunn (Germany): Julius Klinkhardt, 1955. 357 p.
56. HUGELSHOFER, ALICE. *Ganzheitlicher Leseunterricht. Ein Lehrgang durch die Fibel "Roti Rösli im Garte."* (Core-Curricular Reading Instruction. A Course of Instruction with the Primer "Roti Rösli im Garte"—"Little Red Rose in the Garden" in Swiss Dialect.) Mit einem Nachwort von J. M. Bächtold. Zürich: Verlag der Schweizerbibel des Schweizerischen Lehrervereins, (Bockenholzstrasse 31), 1956. 130 p.



57. HUTH, ALBERT. *Abriss der pädagogischen Anthropologie*. (Outline of Educational Anthropology.) Klinkhardts Pädagogische Abrisse. 2. neubearbeitete Auflage. Bad Heilbrunn (Germany): Julius Klinkhardt, 1954. 175 p.
58. HYLLA, ERICH, and KEGEL, OTTO F. *Education in Germany: An Introduction for Foreigners*. Frankfurt am Main: Hochschule für Internationale Forschung (Schloss-Strasse 29/31), 1954. 71 p.
59. HYLLA, ERICH, and WRINKLE, WILLIAM L. *Die Schulen in Westeuropa*. (The Schools in Western Europe.) Im Auftrag der Hochschule für Internationale Pädagogische Forschung bearbeitet und herausgegeben. Bad Nauheim (Germany): Christian, 1953. 663 p.
60. JÖDE, FRITZ. *Das kann ich auch. Einführung in die Musikantenfibel*. (I can Do That, Too. Introduction to the Musicians' Primer.) Mainz: B. Schotts Söhne, Verlag Junge Musik, 1953. 87 p.
61. JÖDE, FRITZ. *Die Musikantenfibel. Ein Weg zur Melodie*. (The Musicians' Primer. A Road to Melody.) Bausteine für Musikerziehung und Musikpflege, Werkreihe B 109. Mainz: B. Schotts Söhne, Verlag Junge Musik, 1953. 34 p.
62. KERN, ARTHUR. *Sitzenbleiberehend und Schultreise. Ein psychologisch-pädagogischer Beitrag zu einer inneren Reform der Grundschule*. (Repeaters' Woes and School Readiness. A Contribution of Educational Psychology to an Inner Reform of the First Four Grades.) Freiburg im Breisgau: Herder, 1951. 141 p.
63. KERN, ARTHUR, and KERN, ERWIN. *Die Praxis des ganzheitlichen Lesenlernens*. (The Application of the Core Curriculum to Reading Instruction.) Neubearbeitung des Werkes "Mit der Ganzheitsmethode durch das 1. Schuljahr." 7. Auflage. Freiburg: Herder, 1955. 165 p.
64. KLEINERT, HEINRICH, and OTHERS. *Lexikon der Pädagogik*. (Encyclopedia of Education.) I. Systematischer Teil A-J. II. Systematischer Teil K-Z. III. Ueberblick über die Geschichte der Pädagogik. Biographien. Monographien zum Erziehungswesen einzelner Staaten. Bern: A. Francke AG., 1950-52. 806, 928, 624 p. mit Register.
65. KRAUS, EGON, and OBERBORBECK, FELIX. *Musik in der Schule*. (Music in the School.) Band a: Vorstufe. Singfibel. I. Liederbuch. II. Singbuch. III-IV. Chorbuch für gemischte und gleiche Stimmen. V-VII. Musikkunde. Wolfenbüttel (Germany): Mösel, 1951. 61, 129, 164, 164, 220, 191, 215 p.
66. KRAUS, EGON, and SCHOCH, RUDOLF. *Der Musikunterricht. Beiträge zu einer neuen Methodik*. (The Teaching of Music. Contributions to a New Methodology.) I. Die Improvisation. II. Weckung des Formgefühls. Wolfenbüttel (Germany): Mösel, 1954. 24 p.
67. KRIECK, WILHELM, and WILKER, KARL. *Ganzheitlicher Bildungsplan der Stadtschule*. (Core-Curriculum Educational Plan of the City School.) Arbeitshilfe in der neuen Schule. Der Bildungsplan der neuen Schule. Ausgabe B. Oberursel/Taunus (Germany): Finkenverlag, 1954. 244 p.
68. KROH, OSWALD. *Revision der Erziehung*. (Revision of Education.) Heidelberg: Quelle und Meyer, 1952. 224 p.
69. KROH, OSWALD. "Die veränderte Gesellschaft und ihr Einfluss auf die Erziehung." (Changed Society and Its Influence on Education.) *Erziehung wozu? Pädagogische Probleme der Gegenwart*. Stuttgart: Alfred Kröner, 1956. p. 19-32.
70. KURZBEITEL, LEOPOLDINE, and OTHERS. *Was nun? Mehr als 200 Berufe zur Wahl! Ein berufskundliches Nachschlagebuch*. (What Now? More Than 200 Occupations To Choose From! A Reference Book for Occupations.) Beiträge einer Arbeitsgemeinschaft der Berufsberater des Landes des Arbeitsamtes Wien. Bearbeitet von Theodora Wasmuth. Wien: Ketterl, 1954. 303 p.
71. LANG, LUDWIG. *Erziehung in dieser Zeit*. (Education of Today.) Wien: Oesterreichischer Bundesverlag, 1955. 167 p.
72. LANG, LUDWIG. Herausgeber im Auftrag des Bundesministeriums für Unterricht. *Das Schulhaus der Gegenwart*. (The Modern School Building.) Referate und Ergebnisse der 2. österreichischen Landschultagung. Wien: Oesterreichischer Bundesverlag, 1952. 362 p.
73. LANG, LUDWIG. *Landschulerneruerung, Landschulplan*. (Modernizing the Village School: Plan for the Village School.) Versuchsschularbeit für Land und Stadt, 1. Landschulreihe 5. Wien: Oesterreichischer Bundesverlag, 1953. 91 p.

74. LANG, LUDWIG, and OTHERS. *Neue Wege zur Schülererkenntnis*. (New Means for Judging the Pupil.) Als Einführung in die Praxis des Erziehungsbogens, herausgegeben im Auftrag des Bundesministeriums für Unterricht. Wien: Oesterreichischer Bundesverlag, 1952. 280 p.
75. LÜFFLER, EUGEN. "Der Wiederaufbau des Schulwesens nach 1945 in der west-deutschen Bundesrepublik." (The Rebuilding of the School System after 1945 in the West German Federal Republic.) *Bildungsfragen der Gegenwart*. Herausgegeben von Franz Arnold. Stuttgart: E. Klotz, 1953. p. 13-33.
76. MAYER, AMALIE; MEISSNER, HILDEGARD; and SIESS, HENRIETTE. *Geschichte der österreichischen Mädchenmittelschule*. (History of the Austrian High School for Girls.) 2 Bände. Wien: Oesterreichischer Bundesverlag, 1952-55. 189, 291 p.
77. MAYRÖCKER, FRANZ. *Erziehungsschwierigkeiten. Ein Handbuch für Eltern und Erzieher schwieriger Kinder*. (Teaching Problems. A Handbook for Parents and Teachers of Problem Children.) Hippolyt-Bibliothek, 13. Wien, St. Pölten: Hippolyt-Verlag, 1951. 168 p.
78. MEYER, HANS. *Fröhliche Kinderkunst in der Schule*. (Gay Children's Art in the School.) Pädagogische Studienhilfen. München: Christian Kaiser, 1953. 136 p.
79. MONTALTA, EDUARD. "Ausbildungs- und Fortbildungsmöglichkeiten des Erziehers." (Possibilities for Training and Postgraduate Study for the Teacher.) *Erziehung als Beruf*. Bericht über die Internationale Werktagung 1954 in Salzburg. Herausgeber: Wolfgang Brezinka. Wien: Oesterreichischer Bundesverlag, 1955. p. 75-95.
80. MÜLLER-ECKHARD, HANS. *Das unverstandene Kind*. (The Child Who Is Not Understood.) 2. Auflage. Stuttgart: Ernst Klett, 1954. 269 p.
81. NÄF, WERNER. *Wesen und Aufgabe der Universität*. (Nature and Task of the University.) Denkschrift im Auftrag des Senates der Universität Bern. Bern: 1950. 175 p.
82. NETZBAND, GEORG, and ESCHEN, FRITZ. *Kunstpädagogische Anregungen*. (Art-Education Stimuli.) Konstruktives Gestalten, 3. Göttingen, Frankfurt, Berlin: Musterschmidt, 1955. 130 p.
83. NEUBER, SIEGFRIED. "Ganzheitliche Vierjahresplanung von Sachunterrichtseinheiten der Volksschuloberstufe." (Core-Curricular Four-Year Plan of Subject Matter Units in the Upper Grades of the Elementary School.) *Pädagogische Welt. Monatsschrift für Erziehung, Bildung, Schule*. p. 121-28, May 1951.
84. NITSCHKE, PAUL. *Die Pflege der Kinderstimme*. (Care of the Child's Voice.) Bausteine für Musikunterricht und Musikpflege, 4. Mainz: B. Schotts Söhne, Verlag Junge Musik, 1952. 42 p.
85. PALLY, CLEMENS. *Das Aufnahmeverfahren der Sekundarschule*. Mit besonderer Berücksichtigung der alemannischen Schweiz. (Registration Procedure in the Secondary School. With Special Reference to Alemannic Switzerland.) Freiburg (Switzerland): Universitätsverlag, 1955. 156 p.
86. PFAHLER, GERHARD. *Kobolde und böse Geister in Kinderherzen*. (Goblins and Wicked Spirits in the Child's Mind.) Bedrohte Jugend, Drohende Jugend, 15. 2. Auflage. Stuttgart: Klett, 1953.
87. PIAGET, JEAN. *Das moralische Urteil beim Kinde*. (Moral Judgment in the Case of the Child.) Zürich: Rascher, 1954. 463 p.
88. PIAGET, JEAN. *Die Bildung des Zeitbegriffes beim Kinde*. (Teaching the Child the Concept of Time.) Zürich: Rascher, 1955. 397 p.
89. PLOETZ, FRITZ. *Kind und lebendige Natur. Psychologische Voraussetzungen der Naturkunde in der Volksschule*. (The Child and Living Nature. Psychological Premises of Nature Study in the Elementary School.) München: Kösel-Verlag, 1955. 78 p.
90. PÖSCHL, JOSEF F., and OTHERS. *Die zweite Schulstufe. Nach den Grundsätzen des einheitlichen Gesamtunterrichts, der Bodenständigkeit und der Selbstbetätigung*. (The Second Grade. Principles of Uniform Core Instruction, Receptivity, and Initiative.) Der Unterricht in der Volksschule, 2. 9. neubearbeitete Auflage. Graz: Leykam, 1952. 526 p.
91. PONTVIK, ALEKSANDER. *Heilen durch Musik*. (Music Therapy.) Zürich: Rascher, 1955. 145 p.

92. PROHASKA, LEOPOLD. *Kind und Jugendlicher der Gegenwart. Ein Beitrag zu einer modernen Jugendkunde.* (The Child and the Adolescent of Today. A Contribution to a Modern Knowledge of Youth.) Veröffentlichungen des Institutes für vergleichende Erziehungswissenschaft, Salzburg, 8. Wien: Oesterreichischer Bundesverlag, 1956. 224 p.
93. ROTH, HEINRICH. *Kind und Geschichte. Psychologische Voraussetzungen des Geschichtsunterrichts in der Volksschule.* (The Child and History. Psychological Premises of History Instruction in the Elementary School.) München: Kösel-Verlag, 1955. 123 p.
94. ROTH, HEINRICH, and OTHERS. *Unterrichtsgestaltung in der Volksschule.* (Organization of Instruction in the Elementary School.) I. Naturkunde. II. Geographie. Aarau (Switzerland): Sauerländer, 1955-56. 83, 169 p.
95. ROTTER, GUSTAV. *Die alten Sprachen in der Bildungsschule.* (The Classical Languages in the Seminary.) Bausteine zur Bildungsschule. Erziehung und Unterricht. Sonderreihe. Wien: Oesterreichischer Bundesverlag, 1954. 66 p.
96. RÜEGG, WALTER. *Humanismus, Studium Generale und Studia Humanitatis in Deutschland.* (Humanism, General Course of Study, and Studies in the Humanities in Germany.) Genf and Darmstadt: Holle-Verlag, 1954. 64 p.
97. SCHAEFER, HANS. "Wesen und Unwesen der Hochschulbildung." (The Essential and Non-Essential in University Education.) *Erziehung wozu? Pädagogische Probleme der Gegenwart.* Stuttgart: Alfred Kröner, 1956. p. 63-80.
98. SCHÄFER, WALTER. *Und wieder einmal Studium Generale. Möglichkeit an der höheren Schule.* (Another General Course of Study. Possibilities in the Preparatory School.) Schriftenreihe der Odenwaldschule, 7. Oberhambach über Heppenheim (Germany): Odenwaldschule, 1956. 14 p.
99. SCHAEFFER, HELEN, and OTHERS, Herausgeber. *Vor mir die Welt. Das Berufswahlbuch für die junge Schweizerin.* (The World Before Me. Handbook on Choice of a Profession for the Young Swiss Girl.) Zürich: Rotapfelverlag, 1956. 393 p.
100. SCHAFFNER, MARKUS A. *Kinderspiel und Spielzeug.* 4. Auflage. (Children's Play and the Toy.) Basel: R. G. Zbinden, 1951. 77 p.
101. SCHERPNER, HANS, and TROST, FRIEDRICH, Herausgeber und Schriftleiter. *Handbuch der Heimerziehung. Die Kinder und Jugendlichen der Erziehungsheime.* Teil 1. 2. *Grundfragen der Heimerziehung.* 5. (Handbook of Home Instruction. Children and Adolescents in Educational Establishments. Parts 1. 2. Basic Problems of Home Instruction. 5.) Frankfurt am Main, Berlin, Bonn: Diesterweg, 1953, 1955. p. 97-192, 193-280, 385-480.
102. SCHEUERL, HANS. *Das Spiel. Untersuchungen über sein Wesen, seine pädagogischen Möglichkeiten und Grenzen.* (Playing. Investigations Concerning Its Nature, Its Educational Possibilities and Limitations.) Berlin: Beltz, 1954. 140 p.
103. SCHNEIDER, FRIEDRICH. "Das Leitbild des Erziehers." (The Teacher's Model.) *Erziehung als Beruf.* Bericht über die Internationale Werktagung 1954 in Salzburg. Herausgeber: Wolfgang Brezinka. Wien: Oesterreichischer Bundesverlag, 1955. p. 9-26.
104. SCHNEIDER, FRIEDRICH. *Jugendkriminalität.* (Juvenile Crime.) Vorträge des Internationalen Kongresses über Probleme der Jugendkriminalität. Veröffentlichungen des Internationalen Institutes für vergleichende Erziehungswissenschaft, Salzburg, 3. Salzburg: O. Müller, 1952. 256 p.
105. SCHNEIDER, FRIEDRICH, Herausgeber. *Die Jugendverwahrlosung und ihre Bekämpfung.* (Juvenile Delinquency and the Battle Against It.) Vorträge des Ersten Internationalen Kongresses über Probleme der Jugendverwahrlosung. Veröffentlichungen des Internationalen Institutes für vergleichende Erziehungswissenschaft, Salzburg, 2. Salzburg: O. Müller, 1950. 278 p.
106. SCHNEIDER, FRIEDRICH. *Das neunte Schuljahr.* (The Ninth Grade in School.) Stuttgart: R. Müller, 1952. 62 p.
107. SCHOHAUS, WILLI. *Seele und Beruf des Lehrers.* (Minds and the Teaching Profession.) 3. Auflage. Schweizerische Pädagogische Schriften, 7. Frauenfeld (Switzerland): Huber, 1954. 60 p.

108. SCHULZ, GERTRAUDE. *Die Erziehungshilfe für Minderjährige. Unter besonderer Berücksichtigung der freiwilligen Erziehungshilfe.* (Educational Aid for Minors, with Special Reference to Voluntary Educational Aid.) Vorbericht für die Fachtagung des Allgemeinen Fürsorgeerziehungstages, Oktober 1954 in Bielefeld. Neue Schriftenreihe des Allgemeinen Fürsorgeerziehungstages, 9. Hannover-Kleefeld, Stephanstift: Geschäftsstelle des AFET, 1954. 43 p.
109. SCHWEINGRUBER, EDUARD. *Pubertät. Grundsätzliches und Praktisches über das Jugendalter und seine christlichen Probleme.* (Puberty. Basic and Practical Information about the Age of Adolescence and Its Religious Problems.) Zürich: Gotthelf-Verlag, 1951. 248 p.
110. SCHWEIZER EIDGENOSSENSCHAFT. "Erziehungsdirektionen, Schulverbände und Vorsteher von Erziehung- und Lehranstalten." (School Directorships, School Organizations, Principals of Reform and Regular Schools.) *Die Schweiz. Ihre Erziehungs- und Bildungsanstalten.* Jahrbuch 22, neubearbeitete Auflage. Altstätten (Switzerland): E. Fischer, 1954. 232 p.
111. SCHWEIZERISCHE EIDGENOSSENSCHAFT. "Konferenz der kantonalen Erziehungsdirektionen." (Convention of Cantonal School Directors.) *Archiv für das schweizerische Unterrichtswesen*, 41. Frauenfeld (Switzerland): Huber, 1955. 228 p.
112. SIMONEIT, MAX. *Fort mit der Schulzensur. Beurteilung von Schülerleistungen.* (Away with Report Cards. Determining Pupil Achievement.) Schriften zur Schulpsychologie, 5. Berlin: Bernhard and Graefe, 1952. 66 p.
113. SIMONEIT, MAX. *Ueber Kindercharaktere. Bewertung und Schülerauslese.* (On Children's Characters. Evaluation and Pupil Selection.) Schriften zur Schulpsychologie, 4. Berlin: Bernhard and Graefe, 1952. 77 p.
114. SPIEL, OSKAR, and BIRNBAUM, FERDINAND. *Reise ins Leben. Eine Anleitung zu seelischer Hygiene für junge Menschen.* (Journey into Life. A Guide to Mental Hygiene for Young People.) Wien: Verlag für Jugend und Volk, 1954. 144 p.
115. STERN, ERICH. *Verhaltens- und Charakterstörungen bei Kindern und Jugendlichen.* (Behavior and Character Disturbances in Children and Adolescents.) Zürich: Rascher, 1953. 248 p.
116. STIEGER, KARL. *Unterricht auf werktätiger Grundlage. Ein Beitrag zur Psychologisierung des Primarschulunterrichts.* (Teaching on a Daily Basis. A Contribution to the Application of Psychology in Primary School Teaching.) Olten (Switzerland) and Freiburg im Breisgau (Germany): Otto Walter, 1951. 160 p.
117. STIEGER, KARL; MÜLLER, FRANZ; and MÜLLER, JOSEF. *Pädagogische Werkhefte. Unterricht auf werktätiger Grundlage. I. Oxydation, Atmung und Blutkreislauf. II. Elektrizität. Vom Wesen unserer Nährstoffe. Die Fäulnis.* (Educational Workbooks. Teaching on a Daily Basis. I. Oxidation, Respiration, and Circulation. II. Electricity. On the Nature of Our Nutritive Material. Decomposition.) Olten (Switzerland) and Freiburg im Breisgau (Germany): Otto Walter, 1951, 1955. 112. 84 p.
118. STOVEROCK, DIETRICH. *Singt und Spielt. Musikbuch für Volksschulen.* (Sing and Play! Music Book for Elementary Schools.) 2. Auflage. Bielefeld, Hannover, Berlin: Velhagen and Klasing, 1952. 161 p.
119. STREBEL, GERTRUD. *Schulreife-test. Beitrag zur Theorie und zur praktischen Erfassung der Schulreife.* (School Readiness Test. Contribution to the Theory and to the Practical Conception of School Readiness.) 2. Auflage. Solothurn (Switzerland): St. Antonius Verlag, 1955. 247 p.
120. STROBACH, WOLFGANG. *Der Deutschunterricht in der Bildungsschule.* (The Teaching of German in the "Bildung" School.) Bausteine zur Bildungsschule. 2. Erziehung und Unterricht. Sonderreihe. Wien: Oesterreichischer Bundesverlag, und Verlag für Jugend und Volk, 1955. 71 p.
121. STÜCKRATH, FRITZ. *Kind und Raum. Psychologische Voraussetzungen der Raumlehre in der Volksschule.* (The Child and Space. Psychological Premises of Geometry in the Elementary School.) Psychologie der Unterrichtsfächer der Volksschule. Herausgeber: Wilhelm Hansen, in Verbindung mit dem Deutschen Institut für Wissenschaftliche Pädagogik in Münster. München: Kösel, 1955. 114 p.
122. TEUSCHER, HANS. *Lebensvoller Musikunterricht.* (Meaningful Music Instruction.) Bad Heilbrunn (Germany): Julius Klinkhardt, 1953. 146 p.

123. THOMAE, HANS. *Beobachtung und Beurteilung von Kindern und Jugendlichen.* (Observation and Judging of Children and Adolescents.) Psychologische Praxis. Schriftenreihe für Erziehung und Jugendpflege. Herausgeber: Ernst Probst. Basel: S. Karger, 1954. 64 p.
124. TILLE, JOSEF. *Theorie und Praxis des Aufsatzunterrichts.* (Theory and Application of the Teaching of Composition.) Wien: Verlag für Jugend und Volk, 1950. 211 p.
125. TILLE, JOSEF, and TILLE, ANNA. *Ein neuer Weg im Erstleseunterricht auf analytisch-synthetischer Grundlage.* (A New Method of First Instruction in Reading on an Analytical-Synthetic Basis.) Pädagogisch-psychologische Arbeiten des Pädagogischen Institutes der Stadt Wien, 10. Herausgeber: Albert Krassnigg, Hermann Schnell und Anton Simonic. Wien: Verlag für Jugend und Volk, 1954. 123 p.
126. TROJAN, FELIX. *Die Kunst der Rezitation. Anleitung zu ausdrucksrichtigem Vortrag.* (The Art of Recitation. Guide to Idiomatic Presentation.) Wien: Oesterreichischer Bundesverlag, 1954. 92 p.
127. TRÜMPER, HERBERT. *Handbuch der Kunst und Werkerziehung für allgemeinbildende Schulen.* (Handbook of Art and Vocational Training for Non-Specializing Schools.) Band I. Allgemeine Grundlagen der Kunstpädagogik. (Vol. 1. General Bases for Art Education.) 2. Auflage. Berlin: Rembrandt-Verlag, 1953. 498 p.
128. TUMLIRZ, OTTO. *Die Jugendverwahrlosung. Ihre psychologischen, pädagogischen und sozialen Probleme.* (Juvenile Delinquency: Its Psychological, Educational, and Social Problems.) Graz, Wien: Leykam, 1952. 122 p.
129. TUMLIRZ, OTTO. *Die Reifejahre. Untersuchung zu ihrer Psychologie und Pädagogik.* (Adolescence. Investigation of Its Psychology and Education.) 3. erweiterte Auflage. Bad Heilbrunn (Germany): Julius Klinkhardt, 1954. 275 p.
130. ULSHÖFER, ROBERT. *Der Deutschunterricht (zahlreiche Schriften seit 1948).* (The Teaching of German: Numerous Articles since 1948.) "Methodik des Deutschunterrichts. Mittelstufe I," 1953. No. 6. 166 p. "Sprachbetrachtung in der Gegenwart," 1954. 2. 128 p. "Das Drama im Unterricht," 1954. 3. 96 p. "Zur deutschen Spracherziehung," 1954. 4. 108 p. "Lyrik der Gegenwart," 1954. 6. 103 p. "Prosa der Gegenwart in der Schule," 1955. 1. 99 p. "Kunsterziehung im Deutschunterricht," 1954. 4. 88 p. "Die deutsche Rechtschreibreform," 1955. 5. 128 p. "Die mittelalterliche Dichtung in der Schule," 1956. 1. 104 p. "Mundarten und Schriftsprache," 1956. 2. 92 p. Stuttgart: Ernst Klett, 1948-56.
131. WAGENSCHNEIN, MARTIN. "Stoffbeschränkung und das Niveau der höheren Schule." (Limiting of Subject Matter and the Secondary School Level.) *Pädagogische Provinz*, p. 642-47, April 1950.
132. WALPER, MAXIMILIAN. *Erlebnisunterricht Rechnen.* (Practical Instruction in Arithmetic.) Wien: Verlag für Jugend und Volk, 1951. 276 p.
133. WEISS, CARL. *Abriss der pädagogischen Soziologie.* (Outline of Educational Sociology.) Teil 2. Soziologie und Sozialpsychologie der Schulklasse. Klinkhardts pädagogische Abrisse. Bad Heilbrunn (Germany): Klinkhardt, 1955. 178 p.
134. WENIGER, ERICH. *Die Eigenständigkeit der Erziehung in Theorie und Praxis. Probleme der akademischen Lehrerbildung.* (Independence of Education in Theory and Practice. Problems of Academic Teacher Training.) 1952. 555 p.
135. WENKE, HANS. "Probleme des neunten Schuljahres." (Problems of the Ninth Year in School.) *Pädagogische Arbeitsblätter* 7: 257-67; June 1954.
136. WEYRICH, JOSEF. *Der Rechenunterricht auf der Oberstufe ländlicher Volksschulen.* (The Teaching of Arithmetic in the Upper Grades of Rural Elementary Schools.) Landschulreihe, 3. Wien: Oesterreichischer Bundesverlag, 1950. 83 p.
137. WIENER STADTSCHULRAT, Herausgeber. *Das Wiener Schulwesen.* (The Vienna School System.) Wien: Verlag für Jugend und Volk, 1955. 53 p.
138. WINKLER, CHRISTIAN, and ESSEN, ERIKA. *Deutsche Sprecherziehung.* (German Speech Education.) Düsseldorf: Schwamm, 1954. 497 p.
139. WOLLASCH, HANS. "Zur Typologie des Erziehers." (On the Characteristics of the Teacher.) *Erziehung als Beruf.* Bericht über die Internationale Werktagung 1954 in Salzburg. Herausgeber: Wolfgang Brezinka. Wien: Oesterreichischer Bundesverlag, 1955. p. 96-140.

140. WYMAN, HANS. *Die Reorganisation der Oberstufe der zürcherischen Volksschule. Diskussionsbeitrag zuhanden der Schulbehörden und der Lehrerschaft.* (The Reorganization of the Upper Grades of the Zürich Elementary School. Contributory Discussion for the School Board and the Teaching Staff.) Zürich: Beilage zum Geschäftsbericht der Zentralschulpflege Zürich 1953/54. 1954. 62 p.
141. ZEHETNER, JOSEF. *Handbuch der Fürsorge und Jugendwohlfahrtspflege.* (Handbook of Assistance and Youth Welfare Aid.) Linz: Amt der oberösterreichischen Landesregierung, 1954. 612 p.
142. ZIETZ, KARL. *Kind und psychische Welt. Psychologische Voraussetzungen der Naturlehre in der Volksschule.* (The Child and the Psychic World. Psychological Premises of Nature Study in the Elementary School.) Psychologie der Unterrichtsfächer der Volksschule. Herausgeber: Wilhelm Hansen, in Verbindung mit dem Deutschen Institut für wissenschaftliche Pädagogik in Münster. München: Kösel, 1955. 101 p.
143. ZULLIGER, HANS. *Schwierige Kinder. Zehn Kapitel zur Theorie und Praxis der tiefenpsychologischen Erziehungsberatung und Erziehungshilfe.* (Problem Children. Ten Chapters on the Theory and Application of Deep-Psychological Educational Counseling and Educational Aid.) Bern: Paul Huber, 1951. 204 p.
144. ZULLIGER, HANS. *Was weißt du vom Gewissen deines Kindes?* (What Do You Know about Your Child's Conscience?) Bedrohte Jugend, Drohende Jugend. Stuttgart: Ernst Klett, 1954. 55 p.



## CHAPTER V

### Japan\*

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**D**EMOCRACY was not among Japan's major objectives in World War II; it was imposed by the Allied Powers in accordance with the occupation policy after the war. In the process democracy was successfully embodied in various institutions: in the new Constitution and in other laws and regulations. An educational reform was one aspect of these importations.

Fundamental policy of the new education is defined in the Constitution, the Fundamental Law of Education, and the School Education Law, by which, on the one hand, democratic education is institutionalized and, on the other hand, clearly orientated in its ideology. Under such circumstances the practical side of education has been enormously influenced by the ideas and methods of American education, research, and experiments being carried out vigorously and extensively. The new education during the past 10 years has succeeded, to some extent, in bringing up the younger generation along more democratic ways.

#### Administration

There was considerable interest in the board of education system established after the war, and there have been a number of investigations into the cultural obstacles in setting up and operating it. In the field of educational finance, surveys of the conditions of local educational expenses were made by the secretariat of the board of education in each prefecture. Public schools in Japan depend considerably on funds other than from public taxation; one of the chief sources is the Parents and Teachers Association. Several studies depicted the extent and the problems of this source of school support.

There were a considerable number of investigations relating to compulsory school attendance, with emphasis on the principle of equality of educational opportunity.

The advantages and disadvantages of the coeducational system (a postwar development) were studied at various levels and in various regions of Japan and the five- versus the six-day system was also examined.

#### Curriculum

Curriculum was one of the main subjects of educational research after the war and much attention was given to it. Work was carried on in five areas: general curriculums, special educational activities (extracurriculum activities), guidance of learning, teaching materials, and school libraries.

\*The authors preferred not to cite references, but provided a classified bibliography.

A good deal of attention was given to status studies. Each prefectural research institute investigated the condition of curriculum organization in its prefecture in order to provide a basis for reforming the curriculum. Some prefectures have already provided a new direction for curriculum development to meet current conditions. Many of these studies were carried on from the viewpoint of the National Educational Research Institute.

Special educational activities (extracurriculum activities) opened a new field of educational research in the postwar period; emphasis was put on this field of research to study the current situation and to suggest needed improvement.

In the area of teaching materials, studies of textbooks and audio-visual aids to learning were prominent. Recently the development and use of audio-visual aids has flourished and there is a growing body of research on their effectiveness.

There has apparently been no organized or comprehensive study of guidance; however, some valuable research was being carried on in separate subject fields. Most of the studies of school libraries reveal lack of books and facilities due to financial difficulties.

### Educational Measurement

Research in the field of measurement can be classified roughly into three categories: intelligence, scholastic achievement, and personality.

Most research on intelligence was carried on by the educational research institutes in the 46 prefectures and five major municipalities, and dealt with the intellectual abilities of pupils in relation to their scholastic achievement. In Japan, the *Tanaka-Binet Type Test* is widely used; the standardization of the test is still being studied. The effect of children's living conditions on test performance in the various communities is noticeable.

The National Educational Research Institute carried out achievement testing on pupils of elementary and junior high schools in all Japan. Four areas of knowledge were tested: Japanese language, mathematics, social studies, and natural science; the tests were given in 1952, 1953, and 1954. Following this example, each prefectural educational research institute also administered the same types of tests, and numerous reports were issued on the results.

Besides these comprehensive studies, some research dealt with children's scholastic achievement in each curriculum, i.e., in Japanese language, mathematics, social studies, natural science, and English. An abundance of research focused especially on achievement in the Japanese language; the reason is that Japanese is in the basic curriculum and that to learn *Kanji* (Chinese characters) is a problem in Japan. Research on ability to read and write *Kanji* was most extensive.

There were a few basic studies of methods of selecting students to enter higher schools, concerned chiefly with the reliability and validity of aptitude and other tests as a means of predicting success in higher schools.

There were only a few research studies on personality. They dealt mainly with tests of emotions and methods of personality diagnosis.

### **Educational Psychology**

Research in this field can be divided into three categories: experimental psychological studies on general learning behavior, studies of psychology in curriculum learning, and studies of problem children. In general, the present tendency is to emphasize practical problems.

In the first category, general learning behavior, the conditions of learning and transfer of training were studied. In the second category studies concerned with the learning of English and mathematics were carried on. As for the third category, the problems of so-called backward children and children's inferiority complexes were taken up mainly as research subjects.

### **Educational Sociology**

Studies in this field can be divided into three categories. In the first were efforts to make clear the relation between various social conditions in the environment and the content and method of school education. The second may be called school or classroom sociology. Analysis of the framework of society in the classroom contributed to the study of educational method. Third, investigations of delinquency resulting from the displacements peculiar to presentday society brought to light educational problems from a sociopathological point of view.

A number of sociopathological studies were conducted to investigate the relation between the content and method of education and actual community life. However, it seems that there are still very few studies which indicate precisely how to make the results of a survey of actual conditions contribute to the reform of the method and content of education.

In the area of classroom sociology, problems of seating in the classroom, of reward and punishment, of guidance, and of the structure of the class have been the subjects for research. In studies on group dynamics, such problems as the social relations represented in group thinking and learning, the motive for forming a group, and the development of discussion groups, have all been examined. Attention was also given to sociometry. At the elementary level some work was done on achievement in school as related to conditions in the home.

After the war, due to the economic and moral confusion, youth's crimes increased remarkably, and the problem of juvenile delinquency became a subject of concern. A good deal of research was reported on social causes, i.e., the relation of home environment to social trends and de-

linquency. Problems of sex misbehavior and dope addiction were also widely studied.

However, these studies were limited to the diagnosis of the actual conditions and causes of delinquency; the methods and effectiveness of guidance deserve additional attention.

### Guidance and Counseling

Research in this area was carried on in the following three fields: (a) educational and vocational guidance, (b) survey of students' living conditions, and (c) guidance of pupils in their personal life.

Overpopulation and job scarcity made the appropriate educational program a matter of great social concern for parents and students. Considerable effort was, therefore, devoted to research in this area. For the most part, investigations were carried on by the educational research institutes of each prefecture. Social trends were examined, and efforts were made to set up a guidance policy. Follow-up studies of students revealed what happened to them after graduation; of unique interest were surveys of their duties and responsibilities in the positions they obtained. Also of interest was a survey of occupations suitable for women. Student interests, hopes, and attitudes as they seek employment have also been investigated.

The recent war brought financial difficulties to Japanese students and pupils, especially to university students. Surveys made by universities revealed a great postwar increase in the number of students who worked for their school expenses. It was clear that a large number of the students who swarmed to the universities of large cities, such as Tokyo and Osaka, had financial difficulties. Evidence reported showed that while students could frequently find part-time employment in large cities, students in smaller cities had an advantage in this respect. Some students encountered financial difficulties so serious that their health and scholarship were affected.

Study on the actual conditions of pupils' lives was made from the point of view of the interrelation between environment, consciousness, and behavior. Findings were helpful in setting up basic principles for child guidance.

After the war the ethics course in schools was abolished. The result was that education concerning morals became very weak. Naturally there was much social confusion. Recently people have begun to show great concern about this problem; the importance of guidance both in and out of school has been emphasized. Research workers have devoted a good deal of attention to this area.

The training of children can be viewed as having two aspects: the training at home and that in the school. Training at home—particularly parental attitudes and opinions—was studied frequently. Attention was given to the effect of social environment on the child. School training

was examined to determine the effects of reward and punishment on children of different ages.

Studies were conducted in classroom management, especially in relation to the effects and advisability of children's self-government at various grade levels.

### **Mental and Physical Development**

There was evidence of increasing interest in this field by educators and psychologists, and more research was done in this area than in any other.

Studies of the development of infants and children were concerned with their mental, social, and physical development. Study of mental development was more extensive and included perception, concepts of number, speech, reasoning, causality, moral consciousness, and social behavior. Studies of adolescence treated various aspects of development such as interest in sex, moral consciousness, worries, attitudes toward war, and concerns about occupation. These studies reflected a growing interest in the problems of guidance and paved the way for programs to prepare counselors.

### **Curriculum Subjects**

Research on the problems of Japanese language and mathematics has been frequent because these two subjects are included in basic curriculums. A few studies dealt with pupils' mistakes in learning the Japanese language; they were especially useful in the guidance of learning. There were several studies on the problems of Romanizing the Japanese language. There was extensive research on the teaching of arithmetic and mathematics; much attention was given to types and frequency of errors and methods of diagnosis at elementary- and junior high-school levels. Research on readiness in the understanding of algebraic concepts proved useful in the guidance of learning.

Social studies is a new subject in Japan, hence research and studies concerning it are understandably few. A good deal of attention was given to guidance in science. The whole problem of experiment and observation in learning was studied. Other research compared experimental teaching methods with lecture methods.

Vocational education is regarded as an important problem in present Japanese education, and in this field a large number of investigations were made in junior and senior high schools. About half of them attempted to relate programs of industrial education to the characteristics of the vocational situation of each district in cities and villages. Notable among them was a study of industrial education in a senior high school in relation to the complete land development program of Hokkaido. A public opinion survey made for industrial education is also noteworthy.

Research was carried on in the teaching of fine arts for the purpose of developing basic principles of methodology. The focus was on pupils' development of color sense and on their expression of shape.

### Research Methods

Studies of research methods can be classified broadly into three categories. In the first, education is examined from a social viewpoint. Attention is given to surveys, interviewing, and sampling technics. The second category includes studies of research methods for investigating the development of children; these include behavior diagnosis, research methods dealing with the child's home environment, and direct studies of factors in child development. Examples of recent work in each area are cited in the bibliography.

The first and second categories are mainly studies of individual research technics. The third is somewhat different. It is a study of methodology covering the whole field of educational research. The number of such studies is small, but there is at least one work in this field of study, "Educational Methods" by Seiya Munakata, in which an attempt to establish a scientific methodology of education can be seen.

### Special Programs

In this field of study are included educational problems peculiar to remote places; the education of mentally handicapped, physically weak, blind, or deaf children; and also the education of working youths and of adults.

For the past 10 years, Japan has been in the process of instituting compulsory education thru the junior high-school level in remote communities in which people are at a great disadvantage in their natural and social environment. Effectiveness of education in these communities was the subject of several investigations. Attempts were made to discover problems thru comprehensive surveys which covered special needs of teachers and pupils, limitations of the environment, needed curriculum adjustments, school building construction, and equipment and facilities. Altho the results of the research have not yet pointed out any definite solutions, the financial difficulties underlying these problems were made clear.

Attention was given to mentally handicapped, physically weak, blind, and deaf children. Research in this field can be divided broadly into two parts. One comprises surveys and studies of the atypical child's character and intellect; and the other, studies of the organization and administration of special classes for him. In the former most of the research reported dealt with the development of social adjustment and occupational competence. Observational methods were generally used.

Surveys of the problems of postwar children of mixed blood were carried on tho the number of studies on this problem was rather small.

Research in the field of adult education can be divided roughly into two categories. Some research was devoted to studying the problems of adult intelligence and the reaction of adults to mass communication. In the second category was research on curriculums for adult education.



The education of juveniles and working youth began to be studied after the war, and interest in this problem increased in recent years. Efforts were made to discover the implications for educational organization of the conditions under which youths lived and worked. Attention was also given to determining the kinds of guidance, curriculums, and educational facilities which would be suitable for the education of these young adults.

### Teacher Personnel

Comparatively little research was carried on in the area of teacher personnel. In the main, material cited in the bibliography can be classified into three areas. The first includes investigations into the problems of the teacher's suitability to his teaching position, studies of the teacher's life, and studies of his teaching activities in his job. The second group of studies concerns the teacher's intellectual qualities, his attitude toward new educational ideas, and his opinions on the essential points of learning. The third group takes up problems of teacher personality. A few surveys were conducted to determine what children and their parents thought of teachers. Some attention was given to studying the burden of school business, which is often thought by Japanese teachers to be too heavy. The economic situation of teachers, which was studied intensively some time ago, attracted but little attention during the period of this review.

### Bibliography

#### Administration

1. CHIBA PREFECTURE BOARD OF EDUCATION. "Investigation of Educational Expenses To Be Paid by Children's Families in Kaijo County." *Kiyo* (Bulletin) 10: 209-32; March 1953.
2. EDUCATION MINISTRY ELEMENTARY AND JUNIOR HIGH SCHOOL EDUCATION BUREAU. "Survey on Current Conditions of Selection of Public High School Applicants and the School District System." *Kiyo* (Bulletin) S. 27: 94; September 1952.
3. FUKUSHIMA PREFECTURAL EDUCATIONAL SURVEY INSTITUTE. "Is the Educational Fund of Fukushima Prefecture Sufficient for Educational Activities?" *Jittai Chosa Hokokusho* (Report on Survey of Current Conditions) S. 30: 74; March 1955.
4. FUKUSHIMA UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "The Current Status of the Local Board of Education." *Shoho* (Report of the Institute) 17: 15-32; April 1954.
5. Gifu PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Guidance in Co-Education." *Kyoiku Shinri* (Educational Psychology) S. 28, No. 9: 54-55; September 1953.
6. HASHIMOTO (KAGAWA UNIVERSITY). "Current Conditions in Part-Time Schools." *Sangyo Kyoiku* (Industrial Education) S. 28, No. 12: 13-19; December 1953.
7. HIROSHIMA PREFECTURE BOARD OF EDUCATION. "Survey on Long-Absent Pupils." *Chosa Hokoku* (Survey Report) S. 29: 9; August 1954.
8. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Study on Development and Expansion of Part-Time Senior High Schools." *Kiyo* (Bulletin) 3: 26-46; May 1952.

9. KADOMA (HOKKAIDO GAKUGEI UNIVERSITY). "Relation Between Village Economy and School Expenses." *Kiyo* (Bulletin) 4: 45-62; December 1955.
10. KANAGAWA PREFECTURE BOARD OF EDUCATION. "Investigation of P. T. A. Expenses." *Chosa Tokei Hokokusho* (Statistical Survey Report), March 1956. p. 65-78.
11. KUMAMOTO CITY EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of Children's Non-Attendance in Kumamoto City." *Kiyo* (Bulletin) 3: 79; 1953.
12. KYOTO CITY EDUCATIONAL RESEARCH INSTITUTE. "Research on a Synthetic System of Coeducation in Junior and Senior High Schools." *Chosa Hokokusho* (Survey Report) 2: 51; June 1953.
13. MOCHIDA EIICHI (TOKYO UNIVERSITY). "District Education Project and the Board of Education." *Kyoiku* (Education), February 1953. p. 23-31.
14. NAKAYAMA, KEIICHI (AKITA UNIVERSITY). "Relation Between Public Economy and Private Economy Concerning Education—Research Based on Engel's Law." *Gakugei Gakubu Kiyo* (Liberal Arts College Bulletin), October 1951, p. 195-234. December 1952, p. 243-80.
15. NISHI (WAKAYAMA UNIVERSITY). "Social and Economic Factors of Long Absence." *Kiyo* (Bulletin) 3: 111-29; March 1955.
16. OSAKA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions in Local Boards of Education—with Special Attention to Self-Government." *Kenkyu Hokokusho* (Research Report) 21: 10; 1950.
17. SASAKI, TAKASUKE (HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE). "Survey of Public Opinion at the Time of Election of Local Boards of Education." *Kiyo* (Bulletin) 1: 83-102; March 1953.
18. TAKAGI, TARO (KOBE UNIVERSITY). "Study of the Actual Situation in the Election of Boards of Education." *Kenkyu Shuroku* (Collection of Research Works) 7: 56-69; July 1953.
19. TOYAMA PREFECTURE BOARD OF EDUCATION. "Investigation of Educational Expenses To Be Paid by Parents." *Kyoiku Chosa Tokei* (Statistics of Educational Survey) 9: 1-13; March 1953.

### Curriculum

20. AICHI PREFECTURAL CULTURAL RESEARCH INSTITUTE. "Current Conditions of Expenses in School Excursion and Its Guidance." *Kiyo* (Bulletin) 7: 199-242; December 1955.
21. AICHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Various Problems Concerning School Libraries." *Kiyo* (Bulletin) 2: 14-26; October 1951.
22. FUKUOKA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "New Curriculum Organization in the Local Community." *Kyoiku Kenkyu* (Educational Research) 21: 3-35; March 1956.
23. HIRAYAMA, MASAOKI. "Curriculum Plan Concerning Japanese Language in Senior High School." *Kiyo* (Bulletin) 1: 58-77; October 1950.
24. IWAHASHI (FUKUOKA GAKUGEI UNIVERSITY). "Current Conditions of Use of Natural Science Textbooks and Science Guidance." *Kenkyu Kiyo* (Research Bulletin) 3: 57-72; 1953.
25. KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of Special Educational Activity in Junior High Schools." *Kiyo* (Bulletin), March 1956. p. 47.
26. KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of Curriculum of Elementary and Junior High Schools." *Kyoiku Kenkyu* (Educational Research) 4: 94-120; December 1952.
27. NATIONAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of the Current Condition of Elementary and Junior High School Curricula." *Kiyo* (Bulletin) No. 5, Report 1: 462, March 1953; Report 2: 207, March 1953; 378, March 1955; 225, July 1955; 218, March 1956.
28. OSAKA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of the Use of Audio-Visual Aids in Elementary and Junior High Schools." *Kenkyu Hokoku* (Research Report) 9: 19; July 1952.
29. SAGA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Problems of Social Studies Courses." *Kiyo* (Bulletin) 5: 1-28; December 1953.

30. TAKANO, TSUNEO (IBARAGI UNIVERSITY). "Analytical Study of the Junior High School Natural Science Curriculum." *Kiyo* (Bulletin) 4: 65-73; March 1955.
31. TAKEDA, KAZUO (KOBE FOREIGN LANGUAGE COLLEGE). "Theories and Practices of Curriculum." *Ronso* (Collection of Treatises) Vol. 3, No. 3: 1-47; December 1952. Vol. 4, No. 4: 95-113; February 1954.
32. TOKYO CURRICULUM RESEARCH INSTITUTE. "Study on Curriculum in Japan." *Kyoiku Chosa Hokoku* (Educational Research Report) 25: 357; July 1950.
33. TOKYO METROPOLITAN EDUCATIONAL RESEARCH INSTITUTE. "Club Activities in Junior High School." *Kenkyu Series* (Research Series) 24: 64; August 1955.
34. TOKYO METROPOLITAN EDUCATIONAL RESEARCH INSTITUTE. "Extra-Curricular Activities." *Kenkyu Series* (Research Series) 25: 35; September 1955.
35. TOKYO METROPOLITAN EDUCATIONAL RESEARCH INSTITUTE. "Present Conditions of School Libraries and Their Holdings of Books." *Kenkyu Series* (Research Series) 12: 9; March 1955.
36. TOKYO METROPOLITAN EDUCATIONAL RESEARCH INSTITUTE. "Study of Child's Books as Related Teaching Materials." *Kyokasho Kenkyu* (Textbook Research) 6: 70; March 1956.
37. TOKYO UNIVERSITY OF SCIENCE AND LITERATURE. "Educational Survey of Kawaguchi City." *Kyoiku Chosa Hokoku* (Report of Educational Survey) 26: 185; March 1951.
38. YAMANASHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Group Learning." *Kiyo* (Bulletin) 11: 33-85; March 1951.

### Educational Measurement

39. AICHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of IQ Tests of Junior and Senior High School Students in Aichi Prefecture." *Kiyo* (Bulletin) 1: 152-63; November 1950.
40. AICHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Achievement Level in Elementary and Junior High Schools." *Kiyo* (Bulletin) 8: 312; 1955.
41. AOMORI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Achievement Test in Japanese Language and Mathematics in Elementary Schools in Aomori City." *Kiyo* (Bulletin) 1: 136; March 1956.
42. COMMITTEE OF READING AND WRITING ABILITY. "Japanese People's Ability To Read and Write." *Kiyo* (Bulletin) 24: 58; March 1956.
43. EHIME PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Test of Basic Understanding of Natural Science." *Kiyo* (Bulletin) 2: 67-76; May 1950.
44. FUKUOKA CITY EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of Basic Achievement in Mathematics in Junior High Schools." *Shoho* (Report of the Institute) 18: 65; October 1953.
45. Gifu PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of Ability in Applying Scientific Principles." *Zenkoku Kyokenren Hokoku* (Report of All Japan Educational Research Association) 2: 168-179.
46. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Study of Maladjusted Behavior and Characteristics of Personality." *Kiyo* (Bulletin) 2: 24-37; August 1955.
47. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Survey of Achievement of Applicants for Senior High Schools in the Whole Hokkaido Area." *Kiyo* (Bulletin) 2: 163-203; May 1951.
48. IWATE PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Current Conditions of Children's IQ in Iwate Prefecture." *Kiyo* (Bulletin) 1: 1-45; 1950.
49. KAGOSHIMA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Achievement Level in 1953." *Kiyo* (Bulletin) 1: 153; 1955.
50. KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Result of Survey of Achievement on Arithmetic and Mathematics." *Kyoiku Kenkyu* (Educational Research) 10: 12-28; June 1953.
51. KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Students' Achievement in Commercial Course in Senior High Schools." *Kyoiku Kenkyu* (Educational Research) 11: 1954.

52. MIYAZAKI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "Children's Characteristics Shown in the Difference of Environment." *Kyoiku no Kenkyu* (Educational Research) 18: 1-11; March 1954.
53. NAKANISHI, JINTARO (HYOGO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Survey of Ability To Read and Write Educational *Kanji* (Chinese characters)." *Kyoiku Kenkyu Hokoku* (Report of Educational Research), May 1953, p. 1-22.
54. NAKANISHI, NOBORU (OSAKA CITY UNIVERSITY). "Study of Diagnosis of Children's Personality by Projection Method." *Kiyo* (Bulletin) 2: 1-12; March 1955.
55. OKAYAMA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Research on the Method of Selection of Students To Be Admitted to Senior High Schools." *Kenkyu Soshu* (Research Series) 13: 1-43; March 1955.
56. OSAKA GAKUGEI UNIVERSITY. "Relation Between Intelligence and Athletic Ability." *Kiyo* (Bulletin) 1: 207-38; March 1953.
57. SAGA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Present Condition of Natural Science Achievement and Its Counter-Part in Elementary and Junior High School in Saga Prefecture." *Hokokusho* (Report): 116; 1954.
58. SHINANO EDUCATIONAL ASSOCIATION RESEARCH INSTITUTE. "Survey on Current Conditions of Reading and Writing Educational *Kanji* (Chinese characters)." *Kiyo* (Bulletin) 22: 210; December 1953.
59. TOKYO EDUCATIONAL RESEARCH INSTITUTE. "Children's Reading, Writing and Counting Ability." *Kenkyu Series* (Research Series) 1: 22; August 1954.
60. TOKYO EDUCATIONAL RESEARCH INSTITUTE. "Survey of Achievement Tests of Japanese Language by the Tokyo Metropolitan Government." *Kenkyu Series* (Research Report) 16: 67; March 1955.
61. TOYAMA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Analytical Survey of the Achievement Test Papers of Applicants for Senior High Schools in Toyama Prefecture." *Kiyo* 1: 106; July 1951.
62. USHIJIMA, YOSHITOMO (KYUSHU UNIVERSITY). "Test of Social Maturity—Coeducation and Mental Maturity." *Kiyo* (Bulletin) 3: 1-18; March 1955.
63. YOSHIMURA, KIYOSHI (KYUSHU UNIVERSITY). "Study Concerning Entrance Examinations to Senior High Schools." *Kiyo* (Bulletin) 2: 135-48; October 1954.

### Educational Psychology

64. FUKUI (KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Psychology and Guidance of the Children Who Cannot Speak." *Kyoiku Kenkyu* (Educational Research) 6: 35-49; June 1951.
65. FUKUSHIMA (HOKKAIDO GAKUGEI UNIVERSITY). "Analysis of Perceptual Factors Affecting the Learning Process." *Kiyo* (Bulletin) 5: 90-102; August 1954.
66. HOSOKAWA (TOKUSHIMA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Research on Exceptional Children." *Kiyo* (Bulletin) 3: 16-38; March 1953.
67. KYOTO CITY EDUCATIONAL RESEARCH INSTITUTE. "Research on Backward Pupils—Kyoto City High School Students." *Kiyo* (Bulletin) 5: 50; March 1954.
68. KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Study of Problem Children." *Kiyo* (Bulletin) 2: 44-68; February 1949.
69. MIURA, TAIZO (SHIMANE UNIVERSITY). "Psychological Study of Problem Solving in the Mathematics Course." *Ronshu* (Collection of Treatises) 4: 1-19; March 1954.
70. NAKATORI, SHIGEMI (OSAKA GAKUGEI UNIVERSITY). "An Experimental Study of Typical Learning Behaviors." *Kiyo* (Bulletin) 3: 73-84; March 1955.
71. NAKAZAWA, MASATOSHI (SHIZUOKA UNIVERSITY). "An Experimental Study Concerning Transition in Memory Learning of Word Material." *Kenkyu Hokoku* (Research Report) 6: 273-79; March 1956.
72. OBONAI, TORAO (TOKYO UNIVERSITY OF EDUCATION). "Psychological Study of Learning English." *Kyoikugaku Kiyo* (Educational Bulletin), January 1955, p. 143-63.
73. OKAYAMA, CHO (IBARAGI UNIVERSITY). "Relationship Between Emotional Induction and Characteristics of Personality in Human Relations." *Kiyo* (Bulletin) 3: 74-84; March 1954.

74. OKAYAMA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "An Experimental Study on Understanding Speech." *Sosho* (Series) 15: 13-25; March 1956.
75. OSAKA CITY EDUCATIONAL RESEARCH INSTITUTE. "Problem Children from the Teacher's Viewpoint." *Shoho* (Report of the Institute) 16: 27-48; March 1953.
76. SUZUKI (YOKOHAMA CITY EDUCATIONAL RESEARCH INSTITUTE). "Development of Guidance of Problem Children." *Shoho* (Report of the Institute) 9: 67-82; March 1954.
77. TANAKA, KEIJI (SHIZUOKA UNIVERSITY). "Study of Similarity and Discrimination in Eyesight—Especially Infant's Simultaneous Comparison Between Line and Angle." *Kenkyu Hokoku* (Research Report) 6: 263-72; March 1956.
78. YAMANASHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of Education for Socially Maladjusted Children." *Kiyo* (Bulletin) 10: 108-15; March 1951.
79. YANAGAWA, MITSUAKI (NARA UNIVERSITY). "Dynamic Study of the Tensive System in Mental Saturation." *Kiyo* (Bulletin) 3: 113-19; December 1953.

### Educational Sociology

80. ATAKA, RURL. "Relation Between Elementary School Child's Position in His Group and His Home Condition." *Kyoiku Shinrigaku Kenkyu* (Research on Educational Psychology), June 1956. p. 33-40.
81. FUKUOKA CITY EDUCATIONAL RESEARCH INSTITUTE. "Survey of Characteristics of Behaviors and Manners in Local Districts. (Investigation and Study in Hakata District in Fukuoka City)." *Zenkoku Kyokenren Kenkyu Hokoku* (Report of All Japan Educational Research Association), August 1952. p. 9-14.
82. FUKUOKA PREFECTURE CENTRAL COUNSELING BUREAU. "Investigation of Causes of Youths' Misbehavior." *Kiyo* (Bulletin) 4: 85-88; April 1952.
83. FUKUOKA PREFECTURE CENTRAL COUNSELING BUREAU. "Study of Social Background of Youth and Juvenile Delinquency." *Kiyo* (Bulletin) 6: 1-6; 1953.
84. FUMOTO, TEIKO (KOBE UNIVERSITY). "Survey on Education in a Fishing Village in Hyogo Prefecture." *Kenkyu Shuroku* (Collection of Research Works): S. 27, No. 5: 12-26; May 1954.
85. HOKKAIDO UNIVERSITY. "Survey of Current Conditions in Fishing Villages." *Kyoiku Kenkyu Kiyo* (Bulletin of Educational Research) 4: 11-44; December 1955.
86. IKUI (KOCHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Study of Causes of and Countermeasures for Juvenile Delinquency." *Kenkyu Hokoku* (Research Report) 2: 27-43; July 1950.
87. KAWASAKI CITY EDUCATIONAL RESEARCH INSTITUTE. "Influence of Social Environment on Children, Pupils, and Students in Kawasaki City—Mainly Social Environment Which Incites the Gambling Spirit." *Kenkyu Hokoku* (Research Report) S. 29: 57; March 1954.
88. KONISHI, HIDEO. "Social Behaviors of Children in Asylums." *Kenkyu Ronso* (Collection of Research Works), August 1955. p. 30-35.
89. KURATOMI, S. "Group Thinking." *Gakushu Kenkyu* (Research on Learning) of Nara Women's College Attached Elementary School S. 29, No. 11: 11-18, November 1954; 20-37, December 1954; S. 30, No. 2: 41-49; No. 4: 65-75; No. 7: 64-71.
90. NAKANISHI, NOBORU (OSAKA CITY). "Study of Youths and Juveniles Who Habitually Use Awakening Drugs." *Kiyo* (Bulletin) 2: 87-93; March 1955.
91. OGAWA, KAZUO. "Study of Motivation of Group Formation." *Curriculum* S. 25, No. 5: 26-29; May 1950.
92. OUCHI AND UCHIYAMA (SHIMANE UNIVERSITY). "Survey and Study of Home Labor in Agricultural Village." *Ronshu* (Collection of Treatises), March 1952. p. 93-109.
93. SAGA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Study of Children's Sexual Misbehavior in Saga Prefecture." *Kiyo* (Bulletin) S. 29: 39; September 1954.
94. SHIOKAWA, TAKEO. "Study of School Management Based on Sociometry." *Kenkyu Hokoku* (Report of Research Works) 2: 172-83; September 1952.

95. TAKAHASHI, K. "Current Condition of School Management Based on Mental Hygiene." *Kyoiku Shinri* (Educational Psychology) S. 28, No. 11: 57-63; November 1953.
96. TAKEDA (YAMAGATA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Formation of Human Character in Sericultural Village in Yamagata Prefecture." *Chosa Report* (Survey Report) S. 27: 177; May 1954.
97. TOKUSHIMA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Children's and Students' Living Environment." *Kiyo* (Bulletin) 2: 60; March 1956.
98. YANO, SHUN (KYUSHU UNIVERSITY). "Social Classes and Educational Effectiveness in Coal-Mining Areas." *Kiyo* (Bulletin) 2: 74-109; October 1954.
99. YORITA, SHIN, and OTHERS. "Study of Class Construction." *Kyoiku Shinrigaku Kenkyu* (Research on Educational Psychology) 2: 1-9; April 1954.

### Guidance and Counseling

100. AICHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of the Employment Conditions of High School Graduates." *Kenkyu Kiyo* (Research Bulletin) 9: 37-80; May 1956.
101. AKIMOTO (MIYAZAKI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Survey of Occupations Suitable to Women." *Kyoiku Kenkyu* (Educational Research) 6: 44-66; March 1954.
102. EHIME PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Influence of Physical Education on Student's Personality." *Kiyo* (Bulletin) 11: 83-90; October 1953.
103. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Survey of Industrial Education Plan in Senior High School in Accordance with Complete Land Development Program of Hokkaido." *Kiyo* (Bulletin) No. 7: 47-101; May 1952.
104. HOKKAIDO, SORACHI GUN (AKAHIRA MACHI EDUCATIONAL RESEARCH INSTITUTE). "Living Environment of Children and Pupils in Coal Mining Area." *Kiyo* (Bulletin) 3: 84; April 1952.
105. ISHIDA, A., and OTHERS (OSAKA CITY EDUCATIONAL RESEARCH INSTITUTE). "Children's Life Concerning Movies." *Kenkyu Kiyo* (Research Bulletin) 23: 43; March 1956.
106. JAPAN EDUCATIONAL SOCIETY. "Investigation of Scholarship Students' Living Conditions." *Chiba University Kenkyu Kiyo* (Research Bulletin of Chiba University) 2: 49; December 1953.
107. MASUDA, KOICHI, and TAKAHASHI, S. "Survey of Interest in Occupations." *Kobe University Kenkyu Shuroku* (Collection of Research Works of Kobe University) 10: 95-106; July 1953.
108. NIIGATA EDUCATIONAL RESEARCH INSTITUTE. "Survey of Occupational Distribution of High School Graduates." *Kiyo* (Bulletin) 10: 168; March 1955.
109. OSAKA CITY EDUCATIONAL RESEARCH INSTITUTE. "Study of Counseling." *Shoho* (Report of the Institute) 14: 107-79; March 1952.
110. SAGA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Children's Interest in Newspapers." *Kenkyu Kiyo* (Research Bulletin) 9: 24-41; March 1956.
111. SONOHARA, TARO (KYOTO UNIVERSITY). "Survey of School Children's Living Hours." *Kiyo* (Bulletin) 1: 131-71; March 1952.
112. TOKAI HOKUSHIN EDUCATIONAL RESEARCH ASSOCIATION. "Survey of What Happens to the Graduates of Junior and Senior High Schools in Tokai Hokuriku Area." *Kiyo* (Bulletin) 3: 1-5; March 1953.
113. TOKYO GAKUGEI UNIVERSITY. "Survey of Current Conditions of Students' Life." *Kyoiku Chosa Tokei* (Statistics of Educational Survey) S. 26: 38; September 1951.
114. TOKYO UNIVERSITY. "Current Conditions of Life of Tokyo University Students." *Kenkyu Chosa Hokoku* (Research and Survey Report), April 1956. p. 93.
115. TOKYO UNIVERSITY OF EDUCATION. "A Study of Methods of Selecting Students for Colleges." *Kiyo* (Bulletin) 1: 149; January 1955.



**Mental and Physical Development**

116. AICHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Development of a Child's Questions." *Kiyo* (Bulletin) 4: 1-33; February 1951.
117. ASADA, MITSU (OSAKA CITY UNIVERSITY). "Children's Shape Memory—Representation of Color and Shape." *Kiyo* (Bulletin) 2: 34-42; March 1955.
118. CHIBA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Children's Social Consciousness and Their Environment." *Kenkyu Kiyo* (Research Bulletin) 16: 187; December 1954.
119. FUKUOKA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "The Current Condition of Pupils' Moral Judgment in Elementary, Middle and High Schools in Fukuoka Prefecture." *Zenkoku Kyokenren Kenkyu Hokoku* (Report of All Japan Educational Research Association) No. 4: 197-205; September 1954.
120. GIFU PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Juvenile Pupils' Moral Consciousness." *Kiyo* (Bulletin) 12: 50; March 1955.
121. GIFU PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "What Are High School Students Thinking?" *Kiyo* (Bulletin) 12: 104; March 1955.
122. HATTORI, RYOICHI (RESEARCH INSTITUTE, MIE UNIVERSITY). "Survey of the Development Process of Students', Pupils' and Children's Democratic Consciousness by Means of the Tape Recorder." *Kiyo* (Bulletin) 9: 82-88; February 1953.
123. HORIUCHI, TOSHIO (TOKYO GAKUGEI UNIVERSITY). "Survey of Worries in Childhood." *Kenkyu Hokoku* (Research Report) S. 3, No. 7: 16-34; March 1952.
124. IBARACI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Youths and Living Consciousness." *Kiyo* (Bulletin) 9: 413; October 1955.
125. INAGAKI, NAMI (SAITAMA UNIVERSITY). "Physical Development of Post-War School Children." *Kiyo* (Bulletin) 3: 54-76; August 1954.
126. KAMEI, SADA O (YAMAGUCHI UNIVERSITY). "Youths' Self Evaluation." *Kenkyu Ronso* (Collection of Research Works), August 1955. p. 23-25.
127. KANAGAWA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "A Study on Developing Steps of Mathematical Concepts." *Kenkyu Soshu* (Research Series) No. 2: 185, July; No. 4: 76, December 1952.
128. KONDO (HIROSHIMA UNIVERSITY). "Development of Children's Understanding of Causality." *Kiyo* (Bulletin) 1: 105-14; February 1956.
129. KYOTO CITY EDUCATIONAL RESEARCH INSTITUTE. "Survey of Kindergarten Children's Counting Concept." *Bulletin* S. 3: 77; March 1956.
130. KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Junior High School-boys' Worries." *Kenkyu Hokoku* (Research Report) 3: 35; March 1956.
131. MIYAZAKI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "Self Consciousness Shown in Resistance and Alienation." *Kyoiku Kenkyu* (Educational Research) 19: 67-74; July 1954.
132. MURAKAMI, KENZO (KANAZAWA UNIVERSITY). "Study on Physical Development of Youths and Children in Hokuriku Area." *Kiyo* (Bulletin) 1: 96-101; November 1952.
133. NAKANISHI, ICHIRO (KOBE UNIVERSITY). "Students' Opinions on War." *Kenkyu Shuroku* (Collection of Research Works) 1: 198-210; October 1950.
134. OHIRA, KATSUMA. "Study on Co-Relation Between Physical Maturity and Personality." *Kyoiku Shinri Kenkyu* (Research on Educational Psychology) 2: 34-36; August 1954.
135. SHINANO EDUCATIONAL ASSOCIATION RESEARCH INSTITUTE. "Development of Geographical and Historical Consciousness." *Kiyo* (Bulletin) 19: 108; August 1953.
136. SUMIDA (TOKUSHIMA CITY EDUCATIONAL RESEARCH INSTITUTE). "Research on Children Whose Mathematical Sense Has Been Developed." *Kiyo* (Bulletin) 4: 1-16; March 1952.
137. TAKAHATA, and OTHERS (OSAKA CITY EDUCATIONAL RESEARCH INSTITUTE). "Various Problems of Moral Education." *Shoho* (Report of the Institute) 14: 1-104; March 1952.
138. UEDA, TOSHIMI (NARA GAKUGEI UNIVERSITY). "Study on Development of Feeling of Fear." *Kiyo* (Bulletin) 3: 121-27; December 1954. 4: 109-16; March 1955.

139. YABUKI, SHIRO, and SAKURAYAMA, Y. (OSAKA GAKUKEI UNIVERSITY). "Young Students' Attitude Towards Their Parents." *Kiyo* (Bulletin) 2: 75-84; March 1954.
140. YAMAMATSU, SHICHIHUMI (OSAKA CITY UNIVERSITY). "Rhythmical Shape Memory of Kindergarten Children—Recognition and Representation." *Kiyo* (Bulletin) 2: 43-56; March 1955.
141. YOSHIDA, MASAYOSHI. "Youth's Sexual Interest—Survey of Students." *Mie University Kenkyu Nempo* (Research Yearbook of Mie University) 1: 192-97; March 1954.

**Language Arts, Fine Arts, Natural  
Sciences, Mathematics**

142. AICHI PREFECTURE EDUCATIONAL AND CULTURAL RESEARCH INSTITUTE. "Research on Vocational Education." *Kiyo* (Bulletin) 5: 33-60; March 1954.
143. AICHI PREFECTURE EDUCATIONAL AND CULTURAL RESEARCH INSTITUTE. "Survey of Working Conditions of Graduates from Agriculture Course in Senior High Schools." *Kiyo* (Bulletin) 6: 249-70; October 1954.
144. EDUCATION MINISTRY RESEARCH AND PUBLICATION BUREAU. "Survey and Report on Schools Which Have Practiced Roman Letters." *Kyoiku Shinrigaku Kenkyu* (Research on Educational Psychology), March 1951. p. 36.
145. EDUCATION MINISTRY RESEARCH AND PUBLICATION BUREAU. "Survey of Learning Kanji (Chinese Characters) in Compulsory Education." *Kenkyu Ronso* (Collection of Research Works) 4: 112; August 1951.
146. EHIME PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Research on Development of Children's Ability in Drawing." *Kiyo* (Bulletin) 9: 1-36; February 1953.
147. EHIME PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Survey of Children's and Pupils' Verbal Experience." *Kiyo* (Bulletin) 2: 1-14; March 1953.
148. FUKUI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "Positivistic Research on Teaching Subjects." *Kyoiku Kenkyu* (Educational Research) 4: 185; November 1955.
149. FUKUI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "Research on Interest in Teaching Materials of Clothing in Junior High Schools." *Kyoiku Kenkyu* (Educational Research) 1: 65-82; March 1952.
150. FUKUOKA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Public Opinion Survey for Industrial Education in Fukuoka Prefecture." *Kyoiku Kenkyu* (Educational Research) 8: 37-44; February 1954.
151. FUKUSHIMA UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "How Do We Guide Pupils in Physical Training Courses According to Their Ability?" *Shoho* (Report of the Institute) 17: 57-74; March 1954.
152. HIROTA, SEIICHI (KANAGAWA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Development of Thinking Power Necessary in Learning Natural Sciences." *Kiyo* (Bulletin) 1: 89-109; February 1954.
153. HORIKAWA (IWATE PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Influence of Experiments on Results of Teaching Natural Science." *Kiyo* (Bulletin) 6: 111-26; March 1955.
154. KIDA, YURIKO. "Methods of Instruction for Children Inaccurate in Musical Interval." *Kyoiku Ongaku*, (Educational Music) S. 29, 8: 140-46; February 1953.
155. KIMURA, TOSHIO. "Psychological Study of Development of Likes and Dislikes in Color." *Jido Shinri* (Child Psychology) S. 29, 1: 70-79; January 1954.
156. KUBOTA, ISAO (NARA GAKUKEI UNIVERSITY). "Survey of Current Conditions in Arithmetic and Mathematics Education in Elementary and Junior High Schools in Nara Prefecture." *Kiyo* (Bulletin) 3: 157-59; December 1953.
157. KYOTO PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions in Commercial Education in Senior High Schools in Kyoto Prefecture Seen from Specified Statistics of Vocational Education." *Kyoiku Kenkyu* (Educational Research) 9: 25-59; December 1952.
158. MIYAZAKI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "Ability To Solve Problems in Mathematics." *Kyoiku Kenkyu* (Educational Research) 10: 80-89; March 1952.

159. MURAKAMI, and OTHERS (KANAZAWA UNIVERSITY). "Survey and Report on Current Conditions of Health Education in Elementary and Junior High Schools in the Hokuriku Area." *Kiyo* (Bulletin) 1: 102-109; November 1954.
160. MURATA, YOSHIMICHI. "Experimental Study of Miscalculation in Four Rules of Integral Number." *Zenkoku Kyokenren Hokoku* (Report of All Japan Educational Research Association) 2: 143-60; August 1952.
161. OKAYAMA EDUCATIONAL OFFICE. "Research on Vocational Education." *Chosa Hokoku* (Survey Report), February 1953. p. 150.
162. OTOBE, KOKICHI (HOKKAIDO UNIVERSITY). "Concerning Appreciation of Making Shapes." *Kiyo* (Bulletin) of Hakodate Branch School. No. 1: 86-96; May 1952.
163. SHIODA, YOSHIHISA. "Study of Readiness in Arithmetic." *Kyoiku Shinrigaku Kenkyu* (Research on Educational Psychology) 2: 30-42; March 1954.
164. TANAKA (EHIME PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE). "Survey of Elementary and Junior High School Pupils' Historical Consciousness." *Kiyo* (Bulletin) 11: 105-11; October 1953.
165. TOTTORI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Research on Evaluation of Children's Drawing." *Kiyo* (Bulletin) 1: 97-118; March 1951.
166. UEMURA, ROKURO (OSAKA GAKUGEI UNIVERSITY). "Color Education for Children and the Environment." *Kenkyu Gyoseki Shu* (Collection of Research Works) 3: 25-36; July 1954.

### Research Methods

167. JIDO KENKYUKAI (CHILD STUDY GROUP). "Research Methods of Children." *Jido Mondai Shinsho* (New Book for Child Problems) 8: 215; November 1950.
168. KODA, WAHEL. "Research Methods for Sampling and Interviewing: Research Methods for Public Opinion." *Kiyo* (Bulletin) S. 27, No. 6: 95; June 1952.
169. MATSUMIYA, ICHIIYA. "The Interview Research Methods." *Kyoiku Kenkyu* (Educational Research) S. 25: 163; March 1950.
170. MUNAKATA, SEIYA. "Educational Research Methods." *Kiyo* (Bulletin) 2: 416; November 1950.
171. OITA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Educational Social Survey for Educational Programs in Local Communities." *Kyoiku Kenkyu* (Educational Research) S. 30: 39; May 1955.
172. SAITAMA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Study of Sampling Methods in Educational Research." *Kiyo* (Bulletin) 20: 1-39; March 1956.
173. SHUDO, SADAMI (OITA UNIVERSITY). "Study of Observation Methods for Processes of Group Discussion." *Kiyo* (Bulletin) 2: 15-34; March 1953.

### Special Programs

174. EDUCATION MINISTRY, ELEMENTARY AND JUNIOR HIGH SCHOOL EDUCATION BUREAU. "Real Condition of Education in Remote Places." *Kyoikugaku Kenkyu* (Educational Research): 24; May 1953.
175. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Problems of Social Correspondence Courses." *Kiyo* (Bulletin) 6: 48-67; April 1953.
176. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Problems of Youths' Class and Investigation of Youths in Fishing Villages." *Kiyo* (Bulletin) 6: 1-47; April 1953.
177. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Structure of Life in Remote Places." *Kiyo* (Bulletin) 8: 48; October 1953.
178. HOKKAIDO EDUCATIONAL RESEARCH INSTITUTE. "Survey of Real Condition of Single-Class and Compound School in Hitaka District." *Kiyo* (Bulletin) 4: 16-130; February 1953.
179. HOSOYA, and MASAKI. "Teacher's Position and Function in Education in Remote Places." *Kyoikugaku Kenkyu* (Educational Research) S. 29, No. 2: 31-46; June 1954.
180. ISHIDA, KATSUO (IWATE UNIVERSITY). "Investigation of Compound Class School in Iwate Prefecture." *Kenkyu Nempo* (Research Yearbook) Vol. 4, No. 1: 105-109; December 1952.

181. ISONO, and OTHERS (TOKYO MUNICIPAL UNIVERSITY). "Problems of Youth Education in Cities—Concerning Education for Youths Working in Industry." *Jinbungakuho* (Humanities Report) 6: 42-59; September 1952.
182. IWATE UNIVERSITY ATTACHED ELEMENTARY SCHOOL. "Investigation of Mentally Handicapped Children's Occupations in Morioka City." *Kodomotachi* (Children) 11: 38; September 1954.
183. KAWABE (MIYAZAKI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE). "Real Condition of Pupils' Musical Environment and Musical Life in a School in a Remote Place." *Kiyo* (Bulletin) 14: 90-99; March 1953.
184. MIUTA CITY (HOKKAIDO) EDUCATIONAL RESEARCH INSTITUTE. "Real Condition of Special Children and Problem Children in Miuta City." *Kiyo* (Bulletin) 2: 87-119; June 1955.
185. MIYAZAKI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "Investigation of Real Conditions of Single-Classes and Compound Classes." *Kiyo* (Bulletin) 27: 59-73; March 1953.
186. MIYAZAKI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE. "Research on the Views on Compound Classes." *Kiyo* (Bulletin) 27: 1-14; March 1953.
187. NAKA, SHIN, and OTHERS (NAGOYA UNIVERSITY). "Real Condition of Youths' Classes and Educational Policy of Working Youths." *Kiyo* (Bulletin) 7: 12-29; March 1955.
188. SAKAKIBARA, KIYOSHI (TOKYO UNIVERSITY OF EDUCATION). "Some Study Concerning Blind Children's IQ Tests." *Kyoikugaku Kiyo* (Educational Bulletin) 1: 164-90; January 1955.
189. SAWADA, KOHEI (KANAZAWA UNIVERSITY). "Comparison of Athletic Ability Between Ordinary Children and Mentally Handicapped Children." *Kiyo* (Bulletin) 2: 8-13; March 1954.
190. SUGIMOTO (FUKUI UNIVERSITY EDUCATIONAL RESEARCH INSTITUTE). "Study of Structure in Very Mountainous Village." *Kyoiku Kenkyu* (Educational Research), May 1954, p. 116-29.
191. TOKYO METROPOLITAN EDUCATIONAL OFFICE. "Real Conditions of Special Schools." *Kenkyu Series* (Research Series) 5: 21; December 1954.
192. TOKYO UNIVERSITY OF EDUCATION. "Factors Deciding Blind Children's Learning and Intellect." *Kyoikugaku Kiyo* (Educational Bulletin) 1: 200-208; January 1955.
193. TOKYO UNIVERSITY SOCIAL EDUCATION RESEARCH GROUP. "Trends in Boy Scout Activities." *Shakai Kyoiku* (Social Education) S. 26, No. 6: 56-61; June 1951.
194. YAMANASHI PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Current Conditions of Education for Socially Maladjusted Children." *Kiyo* (Bulletin) 10: 108-43; March 1951.

### Teacher Personnel

195. TUKUOKA CITY EDUCATIONAL RESEARCH INSTITUTE. "Rationalization of School Business in Junior High Schools in Fukuoka City." *Shoho* (Report of the Institute) 20: 47; March 1954.
196. GOTO, TOYOJI, and OTHERS (OITA UNIVERSITY). "Research on the New Teacher's Living Conditions and Suitability." *Gakugei Kyoiku* (Art and Science Education) 2-21; March 1954.
197. IZUMI, SACHIO (MIJAZAKI UNIVERSITY). "The Teacher's Consciousness of the Local Board of Education." *Kenkyu Jiho* (Educational Review) 1; 1: 97-108; March 1955.
198. KANAGAWA PREFECTURAL EDUCATIONAL RESEARCH INSTITUTE. "Research on Current Conditions of Teaching Activities." *Kenkyu Hokoku* (Research Report) No. 1: 143, March; No. 2: 105, July 1950.
199. KISHIDA, MOTOMI (TOKUSHIMA UNIVERSITY). "Psychological Research on the Teaching Position." *Gakugei Kiyo* (Bulletin of Arts and Science) No. 2: 35-50; February 1953. No. 3: 56-68; February 1954.
200. OGAWA, KAZUO (SHIMANE UNIVERSITY). "Preparatory Study of the Teacher's Suitability." *Ronshu* (Collection of Treatises) 2: 84-93; March 1952.

201. OI, HIICHIRO (HOKKAIDO GAKUGEI UNIVERSITY). "Educational Attitudes of Principals in Remote Districts." *Henchi Kyoiku Kenkyu Kiyo* (Bulletin of Remote District Education), December 1955. p. 99-104.
202. SAWADA, HARUJIRO, and OTHERS (AKITA UNIVERSITY). "Research on New Teachers' Living Conditions." *Kyoiku Kenkyu Shoho* (Educational Research Institute Bulletin) 2: 43-85; March 1955.
203. TAKAGI, TARO (KOBE UNIVERSITY). "Various Problems of the Teacher's Life at His Working Place." *Kenkyu Ronshu* (Collection of Research Works), Separate Vol., March 1954. p. 9-16.
204. UETAKE, SHOJI. "Change in Pupils' View of Their Teachers." *Jido Shinri* (Child Psychology) No. 12, May 1950.

## CHAPTER VI

### Latin-American Countries:

#### Brazil, Costa Rica, Ecuador, Panama, Puerto Rico

##### *Section A: Brazil*

ANISIO S. TEIXEIRA

**E**DUCATIONAL research appears to require a cultural and economic stage of development which is suitable to its inception and evolution. The evolutionary stage has not yet been reached in Brazil. Educators have not acquired a solidly rooted conviction of its necessity; the scarce financial resources available for educational purposes have been another main cause of the backwardness of research in the educational field. Consequently, an investigation, however superficial, of Brazilian achievements in this field will reveal a lack of theoretical foundation and basic general concepts.

However, in spite of the absence of such fundamental ideas, there is notable evidence of a scientific-experimental mind in educational research undertaken in Brazil, as is evidenced by the material cited.

##### **Administration**

The Municipality in Fortaleza, state of Ceará carried out a social-pedagogical investigation (83) intended to throw light on administrative problems in the educational field. Approximately 4200 students were interviewed by means of a card containing 60 items of information to be obtained from each student. The following aspects of the population were analyzed: distribution of students in accordance with grade in the school, curriculum, and age required for beginning studies; difficulties found in the subjects included in the curriculum; distribution of the students' parents according to their monthly income; and content of the students' breakfast according to the floor level of their dwellings.

As one of a series of monographs on the state educational systems in Brazil, the National Institute of Pedagogical Studies invited Joaquim Moreira de Souza to produce a report on the state of Ceará (88). His work was mainly a well-founded study of the specific geographical and social conditions of that state (which has been hampered in economic development by severe droughts). The study also described the historical development of education and its continuing problems, and of the many attempts to solve them adequately.

Moreira (61) conducted a survey of the educational system adopted by the state of Santa Catarina. The study revealed current conditions in the system, and also treated historical origins, socioeconomic motivations, and future prospects.



A report on the state of Parana by Piloto (71) followed the same general lines as that of Moreira. It emphasized, however, matters relating to the motivation of the population and of the school children, with the purpose of explaining as well as possible the many deficiencies in the learning process and the inadequacy of the schools of Parana.

### Curriculum

Moreira, in his study of the curriculum of the primary schools of Brazil (63), presented a critical exposé of current thinking and historical and social conditions which have influenced the organization of the curriculum of the common primary school.

The study began with a discussion of some preliminary notions in regard to the concept of the school curriculum and the aims to be considered in education. It further dealt with the condition that determined the organization of the traditional elementary-school curriculum, with the curriculum itself and its local and foreign characteristics during the period of the Brazilian Empire, and with the primary school as it was conceived during the first years of the Republican period. It reviewed renovations tried after 1920 and the contemporary tentative reforms of the Brazilian school. It concluded with a general account of the bases and techniques of curriculum improvement and their application in Brazil.

### Educational Measurement: Intelligence Tests

Weil (103) prepared and validated the so-called *Nonverbal Intelligence Test*, which is now being used to establish the intelligence level of the Brazilian population. To measure the intelligence level of 300 adolescents, who were either working in commercial and industrial enterprises or were junior secondary-school students, Costa (34) employed Weil's test. Cordeiro (33) also used this test to compare the intelligence level of students from seven public schools of Pôrto Alegre with that of the students of SENAC (*Servico Nacional de Aprendizagem Comercial*—National Service of Commercial Training). Schechtmann (81) studied the validity of the test by applying it to 100 children from private schools in the Federal District. When selecting social and educational counselors, the Regional Department of SENAC in São Paulo applied Weil's, as well as Meili's tests to 89 individuals at high-school level.

Adapting and studying the *Del Olmo Ability Test* (94), Vieira established national norms applicable to adolescents who have to work and thus need occupational guidance.

Bessa (20) came to the conclusion that personality tests, while prepared for the purpose of studying psychological aspects other than intelligence level, can without losing their value for the specific field also reveal some aspects of the subjects' intelligence. However, correlations between personality and intelligence tests very seldom reach values equal

to those found between actual intelligence tests. He concluded that word tests discriminate among individuals and that this discrimination is not on the basis of intelligence.

Analyzing intelligence tests, Carvalho (30) suggested that test norms are not stable but change thru time, especially when environment changes.

Weil and others (106) are undertaking studies of the intelligence level of salesmen, and their work appears to show the small validity of intelligence tests to forecast success in sales activities.

Ballard's intelligence test was standardized by Macedo (54) in an experiment carried out with 39,851 subjects in the Federal District. He made a comparative study of experiments carried out by national and foreign research workers.

Studying the *Goodenough* test, Barcellos (16) reached the following conclusions: (a) The "draw-a-man" test does not always reveal the child's mental level. (b) One application of the test is not enough to establish the intelligence of the subject. (c) An emotional traumatism may paralyze intelligence, and the drawing made during the shock period does not reveal the child's real intelligence level. (d) The drawing made for the *Goodenough* test may also reveal the emotional state of the child. (e) The parts the child emphasizes with heavy continuous and even lines (with the exception of those relative to the hair) reveal serious affective conflicts, usually originating in aggression. (f) The drawing's size increases in the case of normal emotional states and decreases in the depressive ones. (g) The firmness of the lines is correlated with fear and anguish states. (h) Once the conflicts are conquered, the children do not draw with very heavy lines.

Ginsberg (39) compared the results of a mental test applied to different ethnic and social groups.

### Personality Tests

A wide variety of studies have been carried out on the *Rorschach* technic. Souza in a recent book (85) analyzed the test in all its aspects and offered his own contribution to the study of variations from standard reactions. As a result of his psychiatric and anthropological experience, he concluded with a chapter discussing the *Rorschach* diagram with tables and plates.

Taking as a basis a sample of 100 women and 200 men, Quintela (77) conducted a study largely concerned with problems of perception. With this purpose she studied global answers, details, rare details, clearly seen and badly seen forms, as well as time for and number of answers. After comparing her experience with that of Beck and Klopfer, the author reached the following conclusions: (a) The male group revealed greater tendency toward global answers and the female to details. (b) As to perception, the percentages found were very close to those encountered by other researchers. (c) In regard to details and small details the results largely coincided with those of Beck and Klopfer. (d) With

respect to F+ and F-, the influence of cultural factors seemed to be quite significant.

Nick (65) showed the merits of the Rappaport formula in *Rorschach* testing and explained some of its more important aspects. Weil (99), using the *Rorschach* test in a professional guidance and selection test, reached the conclusion that the G type of perception is characteristic of individuals in high executive positions. Ginsberg (42) used the test among young people from Bahia. Guerra (44) studied it as applied to children. Vieira (95, 96) modified the *Rorschach* in a battery, correlating it with the *Harrower* test.

Based on Allport's and Vernon's work on myopsychism, on Jacobson's expressive movements, and on Bull's and Eysebeck's work on motor-affective correlations, López conceived the *Myokinetic Psychodiagnostic Test*. The existing bibliography on this test is already quite extensive in Brazil, reaching some hundred items. For over 13 years, by means of every possible scientific procedure, the author has uninterruptedly checked the validity of his test (51, 52). He has used the data obtained thru the application of the test in the treatment of psychopaths (53).

Menezes (60) carried out several studies on this test and after 1950 tried it among the Kaingang Indians, as Vieira and Vieira (97) had done before among the Carajá Indians. Ribeiro (78) compared line diagrams of the *MKP* made with each hand separately with those made using both hands at the same time. Faria and Alvim (36), applying the *MKP* in the selection of candidates for nurse training and nursing aids, came to the conclusion that it should be used for diagnostic and prognostic purposes in nursing schools.

Arruda (32), as did the author of the *MKP*, studied the value of this expressive technic when applied to psychopaths.

Bessa (18, 19) and Bessa and Schwarzstein (21) conducted studies on the validity and utilization of the *MKP*. Carneiro and Amaral (27) examined the "nature-nurture" problem, applying the *MKP* to three pairs of identical twins. Avillez (12) gave attention to secondary deviations from the *MKP*. The use of the test in studying aggression was explored by Gammondi and Larez (38). Pereira compiled and examined various statistical indexes from results of the *MKP* applied to normal adults, Indians, murderers, the family constellation, immigrants (67, 69), and applicants to the Preparatory Flying Cadet School (70), finally evaluating intrapsychic coherence in his line diagrams (68). Pontual (73) studied the direction of movements in the *MKP* and in writing. Tuana and Riedel (91) examined the correlation between the Sheldon-Stevens somatotypes and the *MKP*. Andrade presented the first results of his research (5) on the application of the *MKP* to the blind.

### Miscellaneous

The *TAT* is being studied and applied by the Brazilian psychotechnical services. The Institute of Occupational Guidance and Selection (ISOP) in

the Federal District has carried out extensive research on the *TAT* (46, 47).

Based on a study of emotional reactions, Weil (98) elaborated a technic for studying emotional phenomena with the help of clearly defined pictures (as contrasted with the diffuse *Rorschach* ink blots). Among the advantages of this psychodiagnostic test is the fact that the testing and interpretation period does not exceed 20 minutes if the test is given by a thoroughly experienced examiner.

A test for the classification of objects (64, 82) especially designed for the diagnosis of schizophrenia and cerebral lesion cases, was reported on by the ISOP. New scoring keys were made which simplified evaluation and made interpretation more objective. Test results were compared with indications obtained from the *MKP*, interviews, intelligence, interest, personality, *Rorschach* and *TAT* tests. The evidence suggests that the test is suitable for measuring certain aspects of personality and vocational interests. Guimarães (45), using the perception of colors, studied a new technic of diagnosing personality.

Braga (25) carried on research in the Federal District for the purpose of studying artistic aptitudes. She used the *Kwalwasser-Dykema* and *Seashore* musical tests. The results showed a very small correlation (.34) between the two tests. It was apparent, therefore, that the two tests do not measure the same thing. Since the group tested included only professional musicians, the tests were in a sense validated against the group; validity appeared to be higher for the *Kwalwasser-Dykema* than for the *Seashore* test. The author is proceeding with her studies with the purpose of presenting definite results in regard to musical aptitudes in Brazil. Braga (24) also attempted to adapt the *Meier* art test to Brazil.

Almeida (4) studied the *Differential Aptitude Test* meant to measure intelligence and aptitudes. He presented tables of intercorrelation for the various tests.

Ginsberg (40) in a comparative study of the interests of adolescents from different social levels reported on the use of an instrument to measure interest, the so-called "Book-Catalogue"; the instrument is also discussed in another publication (48). Thurstone's interest inventory was evaluated in São Paulo by Angelini (6).

Ginsberg (41) applied the following tests to a group of medical students, for validation purposes: *Wechsler Intelligence Test*, *All Questionary*, *Myokinetic Psychodiagnostic Test*, *Hans Zulliger Collective Z Personality Test*, *Conducted Biography* (following E. Mira y López' recommendations), *Raven's Progressive Matrices*, and *Allport's Study of Values*. She concluded that the tests selected seemed to be suitable for the environment being studied and that the various test results agreed in large part. Machado Filho (55) investigated the use of a Portuguese entrance examination in the Minas Gerais School of Medicine. However, further study on validity and predictive power is needed in order to furnish a battery of tests suitable for the vocational guidance of medical students.

Mandroni (56) compared the results of the *ABC* tests, conceived by Filho, with those of training in reading. She concluded that these tests were quite useful and had a satisfactory degree of validity. Souza (86) presented the conclusions reached in the clinical utilization of a new test of perception.

### Educational Psychology

Research carried out in this field has dealt largely with the psychological characterization of the Brazilian child and adolescent, with special emphasis, therefore, on evolutionary and differential psychology. However, some work especially worthy of note dealt with the phenomenon of learning; some of the results are still unpublished. The work was carried on by Angelini (6, 7, 8, 9) in the field of serial verbal learning. Angelini observed a class of learning phenomena noticeable when one analyzes the serial aspect of learning, which some call intraserial phenomena. He compared the effects of two variables well defined in the serial situation; he also examined similarity of the various items learned and their possible effects on the learning process. He studied learning by first presenting original serial material to the student, and then presenting derivative lists or series in different degrees of derivation. The originality of his work is due principally to his study of the influence on the learning process of the variation of similarity among the listed serial material to be learned, as compared with the influence of different degrees of derivation.

Barcellos (15) and her collaborators conducted research among 124 children, inmates of a public institution in the state of Rio de Janeiro, to validate drawing as a psychodiagnostic test. To this end they used the statistical method and the biographical method, together with direct observation. Analyzing 15,840 spontaneous drawings, and 3000 drawings obtained thru tests and observation (the result of which was the preparation of 124 case studies), the researchers classified the personalities of the drawers, taking into consideration differences in intelligence and difference in trace and size of drawing, psychological differences as related to preferential motives (strange figures, lines, parts of the human body, sexual organs, scenes, geometry, cabalistic drawings, double animals, the sun, and their relation with night sleep); language problems, sense of humor, inventive spirit, and leadership ability.

The work of Souza (87) and Queiros (76) also showed that the drawings could be used for studying a child's personality.

Aguirre (3) studied certain aspects of emotional life (affection, anger, and fear) in adolescents from the high schools of the city of São Paulo. Analyzing the data collected for each sex separately, she emphasized the decisive influence which school experiences have on anger and fear. Adolescents generally fear failure and low marks, especially the males who react by trying to control the causes for such situations. Female adolescents fight fear, praying or seeking help. Anger is also caused by

school failures. Boys generally react by hiding the feeling, while girls generally weep. Affection has as its principal object the parents, especially the mother.

Katzenstein (49) studied anxiety and aggression by administering tests to children of preschool age and by interviewing their mothers. Two hundred children, treated in the Orthophrenic and Psychologic Service in the Federal District were studied by Carneiro (28).

Ginsberg (42) compared the interests of adolescents from different social levels of the city of São Paulo. This study is part of another social psychology project (43) dealing with school children's attitudes toward colored children. Results showed a marked preference for white children on the part of all examinees, whether white or colored, and from whatever social level. Most white children, while showing a friendly attitude toward colored people, attributed to them a secondary position and frequently an inferior social role. Children from the middle class and workers' children who lived in mixed neighborhoods had a less favorable attitude toward Negroes than the children of workers living in almost exclusively white neighborhoods. Altho keeping the white ideal, colored children seldom attribute a secondary position to the Negroes. Bicudo (22) studying the same problems, reached conclusions similar to those obtained by Ginsberg. University students of São Paulo were used as subjects in an investigation conducted to discover what nationalities and national, racial, and regional groups were accepted by this population and to what degree. Martuscelli (58), using a scale of attitudes adapted from the Bogardus *Social Distance Scale*, concluded that there was no relation whatsoever between degree of prejudice and school background, or between prejudice and age.

Veloso studied various cases of school maladjustment (92) in a guidance clinic and made a social and psychological analysis of children in orphanages (93). Medeiros (59) investigated the causes of juvenile antisocial behavior. Among the factors he suggested as causes were: morbid heredity, mental illness, affective instability in infancy due to insufficient schooling, and the affective crisis of adolescence.

Collins (31) studied the application of multiple regression equations to the selection of engineering school students.

The work carried out by Fernandez (37) on the dreams of kindergarten and elementary public-school children leads one to believe that this may be a method which educators might use for finding out patterns and attitudes of the family toward the school child.

Marinho (57) examined the rise and evolution of language in the child, based on a study of data relative to over 100 children, some of whom were watched in their linguistic evolution almost day to day. The child's spontaneous remarks were recorded. In this way the growth of active vocabulary and the relationship of verbal language to the child's general activities, spontaneous drawings, or graphic language were noted. Thus, the various general aspects of the evolution of speech in children



from one to six years were deduced, and a list of words was attributed to every age group, as follows: vocabulary of children from 24 to 35 months, added vocabulary from 36 to 47 months, added vocabulary from 48 to 59 months, added vocabulary from 60 to 71 months, added vocabulary from 72 to 83 months, and general active vocabulary from 72 to 83 months. The evolutionary phases of infantile language were listed thus: babbles and cries stimulated by social presence, words of dubious meaning, phrase words, incomplete simple sentences, incomplete complex sentences, and complete complex sentences (attained at six years of age).

The evolutionary appearance of grammatical functions, the presence of predominant subjects in the speech of the preschool age child, and other findings were revealed by this study.

### **Educational Sociology**

Azevedo (13), starting from the premise that an analysis of the culture and the social milieu in which teaching is operating should precede any educational plan or program, studied the families of school children in Salvador, state of Bahia. The studies of Bicudo (22), Pinto (72), Ginsberg (42), and of the city of Fortaleza (83), also dealt with socio-educational problems.

Moreira in the state of Rio Grande do Sul (61) surveyed the educational situation with attention to socioeconomic status and conditions in the local culture. His monograph included a summary of the main cultural aspects of the state under consideration; a study of the administrative organization in the field of education; a study of the financing of education; the development and current situation of elementary teaching; the social, economic, cultural, and professional status of the teacher; a synopsis of teaching in the intermediate and upper grades; a statistical synopsis of the educational and cultural situation of the state; and finally, a general resumé containing conclusions and practical suggestions.

Using historical and normative survey methods, Abreu (2) conducted a lengthy study of the educational system of the state of Rio de Janeiro. The author presented the general organization of the teaching process, examined state and municipal educational administration, reviewed the general statistical situation in education, and dealt with educational finance. The report also treated problems of elementary teaching and the training of primary-school teachers. Each topic was accompanied by an objective, critical, and pertinent analysis.

### **Guidance and Counseling**

Valuable work in this area was done by Weil (100, 101, 102, 104, 105), Barioni (17), and Costa (34). Weil (101), having reached conclusions similar to those of psychologists in other countries, continued his research in an effort to discover additional differences between persons

engaged in office occupations and persons engaged in sales occupations, especially with respect to personality. He (105) found that intelligence tests were not useful for forecasting success in sales activities; such success seemed to be much more dependent on personality traits. His results provided psychologists with distributions of test scores for sales clerks. Weil further concluded that intelligence tests served better than other measures to differentiate between members of an administrative hierarchy.

The agencies in charge of industrial education are deeply concerned with the training and selection of counselors for occupational schools. To this end Tchaicowsky (89, 90) in 1950 undertook an experiment intended to establish an objectively adequate curriculum for the training of counselors. He also studied the validation of instruments and technics used in guidance activities.

### Mental and Physical Development

Pourchet (74, 75) and Avila (11) studied the physical characteristics of several thousand school children in the Federal District, from the three main groups: white, mixed (*pardo*), and colored. The following anthropometric data were obtained: weight, stature, trunk-cephalic height, height of the acromion and of the externus furculum, biacromial and anteroposterior diameters of the thorax, thoracic perimeter, intercostal diameter, length of upper member, length of hand, length of lower member, and length of foot. The following indexes were also analyzed: health index (*indice cural*), ACH index (for nutritional conditions), and Livi and Kamp's weight index. The second phase of the research was devoted to cephalometry as well as to the study of constitutional types classified in accordance with the criterion proposed by Avila for the Kretschmer classification. The tables presented include both average values and standard deviations so that the data may be compared with similar studies made in other parts of the country or abroad.

### Methods of Research

Barbastéfano (14) studied methods of sample selection in educational research. A list of selected psychological books was published by Siqueira (84).

### Special Programs

Rudolfer (80) undertook a lengthy study of night classes for adult literacy training in São Paulo. She concluded that in these classes individual differences were probably far greater than in any other existing class: the students varied as to sex, age (from 12 to 64), civil status, profession or occupation, nationality, place of birth, and previous school training. Within this wide variation one factor remained more or less

constant: the social class. All students came from the most underprivileged cultural and economic classes. Adults were asked their reasons for attending the literacy classes; responses showed that most came to satisfy immediate personal needs rather than because of social pressures or a desire for education in the abstract. Pacheco (66) examined the value of supplementary courses in the improvement of certain professions.

Cardoso (26) studied the status of professional guidance for children with speech deficiencies. Katzenstein (50) reported findings from a study of two cases of reading and writing difficulties. Aveline (10) examined the teaching of arithmetic (number facts) in primary schools.

Abreu (1) examined the character and aims of secondary education in Brazil, proceeding to a study of its organization and administration, the curriculums and programs, methods and technics employed, and the training and position of teachers, and concluded with an evaluation of the Inter-American Seminar on Secondary Education. His work was objective and critical in nature and was a faithful description of secondary educational problems in Brazil.

Under the guidance of Carvalho, (29), a secondary school was founded at the University of Brazil to serve as a pilot school for all others to be established eventually under the same conditions in the country. Carvalho encountered a major difficulty in organizing the secondary curriculum since according to law, school subjects must be organized in a certain way. She sought the best way of lending the greatest possible liveliness, interest, and efficiency to the teaching process without breaking the law. For this purpose she availed herself of a modernization of Herbart's didactics applied by Morrison in the United States, grouping the different parts of the curriculum in didactic units that were to be developed in accordance with the new pattern proposed by Morrison.

### Teacher Personnel

Ribeiro, Camargo, and Brejon, teachers of school administration and comparative education in the School of Philosophy, Science and Letters of São Paulo (79) investigated the characteristics of teachers who took the examination required to qualify for a teaching career in secondary schools of São Paulo. Bonow (23) studied the curriculum for training primary-school teachers in the Federal District. Danneman, Pinto, and Carvalho (35) examined characteristics of professors of commercial courses.

### Bibliography

1. ABREU, JAYME. *A educação secundária no Brasil*. (Secondary Education in Brazil.) Rio de Janeiro: CILEME- INEP, Ministério da Educação e Cultura, 1956.
2. ABREU, JAYME. *O sistema educacional Fluminense*. (The Educational System in the State of Rio de Janeiro.) Rio de Janeiro: Instituto Nacional de Estudos Pedagógicos, Ministério da Educação e Cultura, 1955.

3. AGUIRRE, MARÍA J. B. FORNARI. *Afeição, cólera e medo entre adolescentes da cidade de São Paulo.* (Affection, Anger and Fear in the Adolescents of the City of São Paulo.) Faculdade de Filosofia, Ciências e Letras, Boletim no. 168. Psicologia Educacional no. 2, 1953.
4. ALMEIDA, ANGÉLIO LIRIO A. *Estudo sobre o Differential Aptitude Test.* (Study of the Differential Aptitude Test.) Arquivos Brasileiros de Psicotécnica, Ano 2, no. 4, 1953.
5. ANDRADE, GERARDO SANDOVAL DE. *Primeiras tentativas de aplicação do psicodiagnóstico Miocinético em cegos.* (First Attempts To Apply Myokinetic psychodiagnosis to the Blind.) Arquivos Brasileiros de Psicotécnica, Ano 7, no. 4, 1955.
6. ANGELINI, ARRIGO LEONARDO. *Aferição do Inventário de Interesses Profissionais de Thurstone.* (Evaluation of the Thurstone Inventory of Professional Interests.) São Paulo Faculdade de Filosofia, Ciências e Letras, 1954.
7. ANGELINI, ARRIGO LEONARDO. "Uma dedução teórica explicativa da curva de posição serial." (A Theoretically Deduced Explanation of the Curve of Serial Position.) *Ciência e Cultura*, Ano 5, no. 2, 1953.
8. ANGELINI, ARRIGO LEONARDO. "Influência da variação da similaridade entre os itens sobre a curva de posição social em aprendizagem verbal." (Influence of the Variation of Similarity of Items in the Curve of Social Position on the Verbal Learning Process.) São Paulo, Separata do *Boletim de Psicologia*, December 1952 to September 1953.
9. ANGELINI, ARRIGO LEONARDO. *Resultados experimentais sobre fenômenos intraserais na aprendizagem, possíveis relações com a psicologia aplicada ao trabalho.* (Experimental Results of Intraserial Phenomena in Learning. Possible Relation with Psychology Applied to Work.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 1, 1954.
10. AVELINE, SUELI. "Como ensinar tabuada?" (How To Teach Arithmetic.) *Revista do Ensino do Rio Grande do Sul*, Ano 2, no. 12, 1953.
11. AVILA, JOSÉ B. "Desenvolvimento físico do escolar." (Physical Development of Students.) *Boletim do Instituto de Pesquisas Educacionais* (Rio de Janeiro), Ano 1, no. 1, 1953; and Ano 1, no. 3, 1954.
12. AVILÉZ, TITO V. *Pesquisas sobre os desvios secundários do psicodiagnóstico Miocinético do Prof. E. Mira y López.* (Study of Secondary Deviations from the Myokinetic Psychodiagnosis of Professor E. Mira y López.) Arquivos Brasileiros de Psicotécnica, Ano 4, no. 4, 1952.
13. AZEVEDO, TALES. *As famílias dos alunos de uma escola primária.* (The Families of the Children of a Primary School.) *Revista Brasileira de Estudos Pedagógicos*, vol. 22, no. 56, 1954.
14. BARBASTÉFANO, ILKA. *Seleção de amostras em pesquisas educacionais.* (Selection of Sampling in Educational Research.) Formação, 1953.
15. BARCELLOS, FERNANDA A. V. *Psicodiagnóstico através do desenho infantil.* (Drawing as a Psychodiagnostic Test for Children.) Rio de Janeiro: Secretaria do Interior e Justiça do Estado do Rio, 1952.
16. BARCELLOS, FERNANDA A. V. *O teste do desenho e o estudo da personalidade infantil.* (The Drawing Test and a Study of Child Personality.) Niterói: Livraria Universitária, 1952.
17. BARIONI, WALTER. *Validade do processo de orientação profissional no Senac.* (Validity of the Process of Occupational Guidance in SENAC.) Anais do 1º Seminário Latinoamericano de Psicotécnica, 1955.
18. BESSA, PEDRO PARAFITA DE. *Ainda a qualidade do Psicodiagnóstico Miocinético.* (Further Remarks on the Quality of the MKP Diagnosis.) *Revista da Faculdade de Direito da Universidade de Minas Gerais*, October 1952.
19. BESSA, PEDRO PARAFITA DE. *Aplicação do Psicodiagnóstico Miocinético na Penitenciária de Neves.* (Utilization of the Myokinetic Diagnosis in the Penitentiary of Neves.) *Revista da Faculdade de Direito da Universidade de Minas Gerais*, Ano 2, October 1950.
20. BESSA, PEDRO PARAFITA DE. *O teste lista de palavras conexas e inteligência.* (Lists of Words and Intelligence Tests.) *Kriteor*, nos. 33 and 34, 1954, Belo Horizonte.
21. BESSA, PEDRO PARAFITA DE, and SCHWARZSTEIN, SUMCHA. *Uma pesquisa sobre a validade do PMK.* (An Examination of the Validity of the MKP.) *Revista da Faculdade de Direito da Universidade de Minas Gerais*, 1955.

22. BICUDO, VIRGÍNIA L. *Atitudes dos alunos dos grupos escolares em relação com a cor dos seus colegas.* (Attitude of Groups of Students in Relation to the Color of Their Colleagues.) Relações raciais entre negros e brancos em S. Paulo. São Paulo: Anhembi, 1955.
23. BONOW, IVA W. *Questionário de opinião sobre o curso de formação de professores primários do Instituto de Educação.* (Questionnaire on a Course for Training Elementary School Teachers in the Institute of Education.) Arquivos Brasileiros de Psicotécnica, Ano 3, no. 3, 1951.
24. BRAGA, LEONILDA D'ANNIBALLE. *Estudo preliminar da adaptação do teste de Meier ao meio brasileiro.* (Preliminary Study and Adaptation of Meier's Test to the Brazilian Medium.) Arquivos Brasileiros de Psicotécnica, Ano 3, no. 2, 1951.
25. BRAGA, LEONILDA D'ANNIBALLE. *Testes musicais.* (Music Tests.) Arquivos Brasileiros de Psicotécnica, Ano 4, no. 4, 1952; and Ano 7, no. 3, 1955.
26. CARDOSO, OFELIA B. "O estado atual da orientação profissional dos deficientes da linguagem." (The Present Condition of Professional Guidance of Students with Speech Deficiencies.) *Revista do SENAC*, Ano 1, no. 4, 1953.
27. CARNEIRO, E. BORGES, and AMARAL, MAURICIO. *O PMK de Mira em três pares de gêmeos univitelinos.* (The MKP of Mira and Three Pairs of Identical Twins.) IV Congresso Brasileiro de Psiquiatria, Neurologia e Medicina Legal, Hospital Juqueri, São Paulo, 1950.
28. CARNEIRO, HELENA DIAS. *Estudo preliminar sobre 200 escolares atendidos no Serviço de Ortofrenia e Psicologia.* (A Preliminary Study of 200 Students Treated in the Department of Orthophrenia and Psychology.) Boletim do Instituto de Pesquisas Educacionais do Distrito Federal, vol. 1, no. 2, 1953.
29. CARVALHO, IRENE DE MELLO. *O ensino por unidades didáticas.* (Teaching by Didactic Units.) Rio de Janeiro: Instituto Nacional de Estrudos Pedagogicos Ministerio da Educação e Cultura, 1954.
30. CARVALHO, IRINÉIA SÁ. *O valor relativo dos testes de inteligência.* (The Relative Value of Intelligence Tests.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 2, 1954.
31. COLLINS, DWANE S. *Pesquisa a propósito da seleção de alunos para o ITA.* (Rio de Janeiro) (Study on the Selection for ITA.) Associação Brasileira de Normas Técnicas, 1954.
32. CONGRESSO MUNDIAL DE PSIQUIATRIA. "Le Psychodiagnostic Myokinétique chez les psychopathes delinquents." (Myokinetic Psychodiagnosis of the Psychopathic Delinquents.) Contribuição ao Congresso Mundial de Psiquiatria em Paris, setembro de 1950. In: *Os Congressos Internacionais de Criminologia e Psiquiatria.* Salvador: Imprensa Oficial da Bahia, 1951.
33. CORDEIRO, MALVINA ROSAT. *Comparação entre o nível mental dos alunos da escola SENAC e os do 5º ano dos grupos escolares de Pôrto Alegre.* (Comparison of the Intelligence Level of the Fifth Grade Students of the Schools of SENAC with That of the Students of Pôrto Alegre.) Correio do SENAC, Ano 5, no. 134, 1954.
34. COSTA, ALICE. *Comparação entre o nível mental e os interesses profissionais de 300 adolescentes comerciais, industriais e ginasianos.* (Comparison of Intelligence Level and Vocational Interests of 300 Adolescents Working in Commercial and Industrial Enterprises, and in Secondary School Students.) Correio do SENAC, Ano 5, no. 135, 1954.
35. DANNEMAN, ROBERTO; PINTO, L. COSTA; and CARVALHO, MAURICIO. *Análise das profissões comerciais.* (Analysis of Professors of Commercial Courses.) Publicação no. 17, Departamento Nacional do SENAC, 1953.
36. FARIA, ERMENGARDA, and ALVIM, BEATRIZ C. *A aplicação do Psicodiagnóstico Miocinético na seleção de candidatos a escolas de enfermagem e de auxiliares de enfermagem.* (The Application of the Myokinetic Test in the Selection of Applicants for the Nursing Schools and for Nurse's Aides.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 2, 1954.
37. FERNANDEZ, GONCALVES. *Sonhos infantis e conduta familiar.* (Children's Dreams and Family Conduct.) *Revista do Ensino*, Ano 4, no. 28, 1955.
38. GAMMONDI, ZAIRA, and LAREZ, BELARMINO. *Pesquisas sobre agressividade no Psicodiagnóstico Miocinético de E. Mira y López.* (Study of Aggression and the Myokinetic Psychodiagnosis of E. Mira y López.) *Revista do Ensino*, Ano 4, no. 28, 1955.

39. GINSBERG, ANIELA M. *Comparação entre os resultados de um teste de nível mental aplicado a diferentes grupos étnicos e sociais.* (Comparison of the Results of Mental Ability Tests Administered to Different Ethnical and Social Groups.) Arquivos Brasileiros de Psicotécnica, Ano 4, no. 4, 1951.
40. GINSBERG, ANIELA M. *Estudo comparativo dos interesses de adolescentes de diferentes meios sociais.* (A Comparative Study of the Interests of Adolescents in Different Social Media.) Arquivos Brasileiros de Psicotécnica, Ano 5, no. 4, 1953.
41. GINSBERG, ANIELA M. *Estudo comparativo dos resultados de algumas provas psicológicas aplicadas a um grupo de estudantes de medicina.* (A Comparative Study of the Results of Several Psychological Tests Administered to Medical Students.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 1, 1954.
42. GINSBERG, ANIELA M. *Um estudo de 100 jovens baianos com o teste Rorschach.* (A Study of a Group of 100 Young People from Bahia Using the Rorschach Test.) Neurobiologia, vol. 13, no. 1, March 1951.
43. GINSBERG, ANIELA M. *Pesquisas sobre as atitudes de um grupo de escolares de São Paulo em relação com as crianças de cor.* (Study of the Attitude of a Group of Students from São Paulo in Relation with Colored Children.) Relações raciais entre negros e brancos em S. Paulo. São Paulo: Anhembi, 1955.
44. GUERRA, CLEODULFO V. *Respostas de crianças ao teste Rorschach.* (Children's Answers to Rorschach's Test.) Monografia no. 8, do Instituto de Psicologia da Universidade do Brasil, 1951.
45. GUIMARÃES, OSVALDO N. S. *Um teste de personalidade.* (A Personality Test.) Educação, no. 49, 1955.
46. INSTITUTO DE SELEÇÃO E ORIENTAÇÃO PROFISSIONAL (ISOP). *TAT. Algumas situações que o teste apresenta dentro da população de adultos que frequenta o ISOP.* (Some Situations Which the TAT Test Reveals in the Adult Population Attending the ISOP.) Arquivos Brasileiros de Psicotécnica, Ano 5, no. 1, 1953, and *Revista do SENAC*, no. 5, 1954.
47. INSTITUTO DE SELEÇÃO E ORIENTAÇÃO PROFISSIONAL (ISOP). *TAT. Algumas situações que o teste apresenta dentro da população de adultos que frequenta o ISOP.* (Some Situations Which the TAT Test Reveals in the Adult Population Attending the ISOP.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 4, 1954.
48. INSTITUTO DE SELEÇÃO E ORIENTAÇÃO PROFISSIONAL (ISOP). *Prova do Catálogo de Livros.* (Book Catalog Test.) Arquivos Brasileiros de Psicotécnica, Ano 2, no. 4, 1950.
49. KATZENSTEIN, BETTI. *Ansiedade e agressividade em crianças pré-escolares.* (Anxiety and Aggression in Preschool Children.) Arquivos Brasileiros de Psicotécnica, Ano 3, no. 4, 1951.
50. KATZENSTEIN, BETTI. *Dois casos de dificuldades na leitura e escrita.* (Two Cases of Reading and Writing Difficulties.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 3, 1954.
51. LÓPEZ, E. MIRA Y. "Estado atual do Psicodiagnóstico Miocinético." (Present Status of the Myokinetic Psychodiagnosis.) *Revista do SENAC*, no. 3, 1953.
52. LÓPEZ, E. MIRA Y. *Étude sur la validité du Psychodiagnostic Miocinétique.* (Study on the Validity of Myokinetic Psychodiagnosis.) Volume Jubilaire en témoignage a Mr. Henri Piéron. Edition Extraordinaire de l'Année Psychologique (Paris), November 1950.
53. LÓPEZ, E. MIRA Y. *Traitement des personnalités psychopathiques a l'aide des données du psychodiagnostic miocinétique.* (Treatment of Psychopathic Personalities Utilizing the Data Obtained from the Application of the MKP on Psychopaths.) Bulletin de Psychologie (Paris), vol. 7, no. 1, December 1953.
54. MACEDO, LUIS. *Padronização do teste mental de Ballard.* (Administration of Ballard's Intelligence Test.) *Revista do Ensino*, Ano 4, no. 25, 1954.
55. MACHADO FILHO, AIRES DA MATA. "Português no exame vestibular." (Portuguese in the Entrance Examination.) *Diário de Notícias* (Rio de Janeiro). Suplemento literário, March 21, 1954.
56. MANDRONI, HELENA. *Como ensinei a ler uma classe "forte" selecionada pelos testes ABC.* (How To Teach Reading to a Superior Class Selected Through the ABC Tests.) *Revista do Ensino*, Ano 3, no. 17, 1953.



57. MARINHO, HELOISA. *A linguagem na idade pré-escolar.* (Language of Preschool Children.) *Revista Brasileira de Estudos Pedagógicos*, vol. 23, no. 57, 1955.
58. MARTUSCELLI, CAROLINA. *Uma pesquisa sobre aceitação de grupos nacionais, raciais e regionais em S. Paulo.* (An Investigation of the Population's Acceptance of National, Racial and Regional Groups.) São Paulo Faculdade de Filosofia, Ciências e Letras.
59. MEDEIROS, MAURICIO. "Fatores de anti-sociabilidade juvenil." (Factors of Anti-social Behavior among Juveniles.) *Jornal do Comércio* (Rio de Janeiro), January 19, 1954.
60. MENEZES, GINIRA M. *Estudo da personalidade dos índios kaingang através do PMK.* (Study of the Personality of the Kaingang Indians Utilizing the MKP.) *Revista do Museu Paulista*, vol. 2, 1953.
61. MOREIRA, J. ROBERTO. *A Educação em Santa Catarina.* (Education in Santa Catarina.) Rio de Janeiro: Instituto Nacional de Estudos Pedagógicos, Ministério da Educação e Cultura, 1954.
62. MOREIRA, J. ROBERTO. *A escola elementar e a formação do professor primário no Rio Grande do Sul.* (The Elementary School and the Training of the Primary Teacher in the State of Rio Grande do Sul.) Rio de Janeiro: Instituto Nacional de Estudos Pedagógicos, Ministério da Educação e Cultura, 1955.
63. MOREIRA, J. ROBERTO. *Introdução ao estudo do currículo da escola primária.* (Introduction to the Study of the Curriculum of the Primary School.) Rio de Janeiro: CILEME- INEP, Ministério da Educação e Cultura, 1956.
64. NICK, EVA. *Teste de Classificação de Objetos.* (Test for the Classification of Objects.) Arquivos Brasileiros de Psicotécnica, Ano 3, no. 4, 1951.
65. NICK, EVA. *O tipo de vivência no psicodiagnóstico de Rorschach.* (The Type of Living Experience and Rorschach's Psychodiagnostic Test). Arquivos Brasileiros de Psicotécnica, Ano 4, no. 2, 1952.
66. PACHECO, LUIZA PRATES L. *Levantamento das profissões dos cursos supletivos de Porto Alegre.* (Improvement of Professions Through the Suppletive Courses of Porto Alegre.) Arquivos Brasileiros de Psicotécnica, Ano 5, no. 3, 1953.
67. PEREIRA, A. DE OLIVEIRA. *Análise da variância e sua aplicação na pesquisa da constelação familiar.* (Analysis of Variance and Its Application to Family Constellations.) Arquivos Brasileiros de Psicotécnica, Ano 3, no. 1, 1951.
68. PEREIRA, A. DE OLIVEIRA. *Avaliação da coerência intrapsíquica nos lineogramas do PMK.* (Evaluation of Intrapsychic Coherence in the Line Diagrams of the MKP.) Arquivos Brasileiros de Psicotécnica, Ano 7, no. 1, 1955.
69. PEREIRA, A. DE OLIVEIRA. *PMK e observações estatísticas.* (MKP and Statistical Observations.) Arquivos Brasileiros de Psicotécnica, Ano 2, no. 2, 1950.
70. PEREIRA, A. DE OLIVEIRA. *Tratamento estatístico do PMK aplicado a candidatos a Escola Preparatória de Cadetes da Aeronáutica (Barbacena).* (Statistical Method in the Study of the Applicants for the Flying Cadet School.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 4, 1954.
71. PILOTO, ERASMO. *A educação no Paraná.* (Education in the State of Paraná.) Rio de Janeiro: Instituto Nacional de Estudos Pedagógicos, Ministério da Educação e Cultura, 1954.
72. PINTO, L. COSTA. *O balconista, aspectos sócio-econômicos.* ("O Balconista," Social and Economic Aspects.) Publicação no. 1 do SENAC, 1952.
73. PONTUAL, JOSÉ S. *A direção dos movimentos no PMK e na escrita.* (The Direction of Writing Movements in the MKP.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 4, 1954.
74. POURCHET, MARIA J. *Pesquisa sobre a caracterização étnica de nossa população escolar.* (Research on the Ethnical Characteristics of Our School Population.) Boletim do Instituto de Pesquisas Educacionais do D. Federal, vols. 1 and 2, 1953 and 1954.
75. POURCHET, MARIA J. *Pesquisa sobre correlação entre subnutrição e escolaridade.* (Study of Correlation Between Undernourishment and School Work.) Boletim do Instituto de Pesquisas Educacionais do D. Federal, vol. 4, 1955.
76. QUEIROZ, AIDIL M. *Motivos ornamentais em desenhos de crianças.* (Ornamental Motifs in Children's Drawings.) *Revista de Psicologia Normale e Patologica*, vol. 1, no. 2, 1955.

77. QUINTELA, GLORIA F. *Psicodiagnóstico de Rorschach*. (The Rorschach Psychodiagnosis.) Arquivos Brasileiros de Psicotécnica, Ano 7, nos. 1, 2, and 3, 1955.
78. RIBEIRO, EMILIA M. *Estudo comparativo dos lineogramas do Psicodiagnóstico Miocinético executados com cada mão em separado e com as duas mãos, simultaneamente*. (A Comparative Study of Line Diagrams of the MKP Made with Each Separate Hand and with Both Hands Simultaneously.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 1, 1954.
79. RIBEIRO, JOSÉ Q.; CAMARGO, JOSÉ S.; and BREJON, MOYSÉS. *Concurso de ingresso no magistério secundário e normal*. (Entrance Examination for the Teaching Career in the Secondary and Normal Schools of São Paulo.) Boletim no. 206, São Paulo Faculdade de Filosofia, Ciências e Letras.
80. RUDOLFER, NOEMY S. *Interesses de adultos analfabetos em S. Paulo*. (Interests of Adult Illiterates in São Paulo.) Fundamentos e Metodologia do ensino supletivo, Campanha de Educação de Adultos, Publicação no. 12, 1950, Departamento Nacional de Educação (M. E. C.).
81. SCHECHTMANN, AUREA. *Estudo sobre os testes de Inteligência Não Verbal de P. Weil, aplicado em escolas particulares*. (Study of Nonverbal Intelligence Tests.) Arquivos Brasileiros de Psicotécnica, Ano 7, no. 4, 1955.
82. SCHNEIDER, ELIEZER. *O teste de classificação de objetos do ISOP*. (The ISOP Test for Classification of Objects.) Arquivos Brasileiros de Psicotécnica, Ano 2, no. 3, 1950; Ano 4, no. 4, 1952; and Ano 3, no. 1, 1951.
83. SEÇÃO DE EDUCAÇÃO DO MUNICÍPIO DE FORTALEZA (ESTADO DO CEARÁ). *Inquerito pedagógico e social realizado pela Prefeitura Municipal de Fortaleza*. (Pedagogical and Social Survey Carried on by the Municipal Government in Fortaleza.) Diário Oficial do Município, Suplemento no. 476, Ano 2.
84. SIQUEIRA, E. ALVES. *Catálogo de livros*. (Book Catalog.) Revista de Psicologia Normale e Patologica, vol. 1, no. 1, 1955.
85. SOUZA, CÍCERO CRISTIANO. *O método de Rorschach*. (The Rorschach Method.) São Paulo: Editora Nacional, 1953.
86. SOUZA, CÍCERO CRISTIANO. *Uma prova perceptiva, auxiliar do psicólogo clínico*. (A Perceptive Test, an Aid for the Clinical Psychologist.) Estudo de Psicologia Teórica e Aplicada no. 1. São Paulo: Escola de Sociologia Política de São Paulo, 1955.
87. SOUZA, FRANCISCO PEDRO E. P. *Diagnóstico as cegas pelo desenho espontâneo*. (Diagnosis of the Blind Through Spontaneous Drawings.) O Seme, vol. 1, no. 3, 1954.
88. SOUZA, JOAQUIM MOREIRA DE. *Estudo sobre o Ceará*. (A Study of the State of Ceará.) Rio de Janeiro: CILEME- INEP, Ministerio da Educação e Cultura, 1956.
89. TCHAIKOWSKY, FANY M. *Seleção de orientadores para o ensino industrial*. (Selection of Counselors for Industrial Schools.) Boletim CBAI, Ano 7, no. 8, 1953.
90. TCHAIKOWSKY, FANY M. *Seleção e treinamento de orientadores educacionais e profissionais*. (Selection and Training of Educational and Occupational Counselors.) Boletim CBAI, Ano 9, no. 7, 1955.
91. TUANA, ELIDA, and RIEDEL, ARMANDO. *Verificação da eventual correlação entre os dados da somatotipia de Sheldon-Stevens e o PMK de E. Mira y López*. (Verification of Eventual Correlation Between the Sheldon-Stevens Somatotypes and the MKP.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 2, 1954.
92. VELOSO, ELISA D. *Casos de desajustamento escolar numa clinica de orientação*. (Cases of Maladjustment in a Guidance Clinic.) Boletim do Departamento Nacional da Criança, 1954.
93. VELOSO, ELISA D. "Estudo social e psicológico de crianças internadas no Abrigo XX." (A Social and Psychological Study of Orphanages.) *Jornal de Pediatria*, vol. 20, fasc. 4, 1955.
94. VIEIRA, DAHIL MARINA M. *Del Olmo Ability Test*. (Del Olmo Ability Test.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 4, 1954.
95. VIEIRA, DAHIL MARINA M. "Estudo sobre os testes de Harrower-Rorschach e aplicação coletiva." (A Study of the Harrower-Rorschach Tests and Their Group Application.) *Anais do I Congresso Argentino de Psicologia*.

96. VIEIRA, DAHIL MARINA M. "Uma pesquisa sobre o teste Rorschach coletivo." (A Study of the Application of the Group Rorschach.) *Neurobiologia*, vol. 17, no. 2, 1954.
97. VIEIRA, DAHIL MARINA M., and VIEIRA, M. VINICIUS MACHADO. *O Psicodiagnóstico Miocinético do Prof. E. Mira y López aplicado aos índios Carajás.* (The Myokinetic Psychodiagnosis of Prof. E. Mira y López, Applied to the Carajá Indians.) Arquivos Brasileiros de Psicotécnica, Ano 6, no. 4, 1956.
98. WEIL, PIERRE G. "O Afetivo Diagnóstico." (Affective Diagnosis.) *Revista do SENAC*, no. 2, 1953.
99. WEIL, PIERRE G. *Algumas considerações sobre o emprego do Psicodiagnóstico de Rorschach no exame de orientação e seleção profissional.* (Some Considerations on the Utilization of Rorschach's Psychodiagnosis in Professional Selection and Orientation.) Arquivos Brasileiros de Psicotécnica, Ano 3, no. 1, 1951.
100. WEIL, PIERRE G. *O balconista, aspectos psicotécnicos.* ("O Balconista," Psycho-technical Aspects.) Publicação no. 1, Departamento Nacional do SENAC, 1952.
101. WEIL, PIERRE G. "O estado atual da orientação profissional para as ocupações comerciais." (The Present Status of Vocational Guidance for Sales Occupations.) *Revista do SENAC*, no. 4, 1953.
102. WEIL, PIERRE G. "Notas escolares e êxito na vida." (School Grades and Success in Life.) *Revista do SENAC*, no. 3, 1953.
103. WEIL, PIERRE G. *A organização do teste de Inteligência Não Verbal como preliminar ao plano nacional de pesquisa sobre o nível mental da população.* (The Organization of Nonverbal Intelligence Tests as Preliminary to the National Plan for Research on the Intelligence Level of the Population.) Arquivos Brasileiros de Psicotécnica, Ano 7, no. 4, 1955.
104. WEIL, PIERRE G. "A orientação profissional e a estabilidade profissional e escolar." (Occupational Guidance and Stability in Professional and School Work.) *Revista do SENAC*, no. 5, 1954.
105. WEIL, PIERRE G. *Porque trabalho no comércio.* (Why I Work in the Field of Commercial Activities.) Correio do SENAC, no. 139, 1954.
106. WEIL, PIERRE G., and OTHERS. *Experiência sobre o nível intelectual de vendedores.* (Study of the Intelligence Level of Salesmen.) Arquivos Brasileiros de Psicotécnica, Ano 5, no. 4, 1953.

## ***Section B: Costa Rica, Ecuador, and Panama***

CARLOS MONCE ALFARO and ERMEL N. VELASCO

### **Administration**

AZOFEIFA (1), in a study of the problems of secondary education in Costa Rica, analyzed such aspects as orientation, courses of study, organization, methodology, and administration; he proposed reorientation and reorganization more in keeping with the needs and aspirations of Costa Rica. A commission of the Ministry of Education of Costa Rica conducted a study on secondary education (5) which dealt with the same subjects covered by Azofeifa (1).

Pittman (9) studied problems of organization and administration of primary and secondary schools, curriculum, orientation, supervision, and child accounting in Costa Rica. Gamboa (3) and Karsen (4) conducted studies of primary education in Costa Rica; they reported trends, methods, reorientation of programs, and analyzed the reports of foreign educational missions in that country as well as the technical assistance programs developed there. Karsen's study contained an exhaustive bibliography while Gamboa's study presented up-to-date information on child accounting, teacher training, physical plant, curriculum, supervision, and extension education.

A report of UNESCO's Technical Assistance Mission to Costa Rica (6) on research projects they had developed included research on rural education, primary education, vocational education, and teacher training. Cruz Gonzáles (2) of UNESCO's Technical Assistance Program for Costa Rica reported research on teacher training, promotions, school mortality, school attendance, reading, school libraries, and testing in rural schools.

St. Malo (10) reported research relative to the school population of the University of Panama and its relation to the fiscal problems of the institution. The report included analysis of the economic situation of students enrolled at the University of Panama (which is an evening institution), and the cost of failures, school mortality, excess teaching personnel, daily classes, and university education, among other problems. Miró (8) determined the economic resources of university students in Panama.

### **Educational Measurement**

The Division of Statistics and Educational Research of the Ministry of Education of Ecuador administered a series of 10 achievement tests to the students of fifth and sixth years of the normal schools (7). The aim was to determine if the students had the general knowledge necessary to become efficient teachers. The fields covered were reading; composition; grammar; spelling; fundamental operations and problems in arithmetic; geometry; geography; history and civics; and the natural, physical, and chemical sciences.

The results showed that many of the facts learned in the primary school had been forgotten. In arithmetical reasoning and grammar the deficiencies were serious. The results showed equally serious deficiencies in the methodology of teaching and in the curriculum.

### Language Arts

Salgado de Carbo (11) conducted a study in five primary schools of Quito, Ecuador, in which 2800 children of ages three to 14 participated. The study dealt with free color drawing and free written composition.

The study analyzed the first steps in the creative work of children, individual differences, and ways in which creative power develops. From ages three to seven the drawings refer to people and things which surround them. Both in drawings and written composition the child of age seven shows egocentrism, syncretism, and animism. In the second phase—beyond age seven—the child begins to evaluate his drawings. He aims at exactness; that is why he writes and draws little. There are no appreciable differences between the drawings made by children of either sex. In the third phase, ages 11 to 12, there is a marked transformation. There is harmony in the drawings as well as beauty in what the child writes. There are marked differences between the sexes. Boys are attracted by national and international problems; they are interested in democracy and are concerned with problems of injustice. Girls prefer sentimental themes; their compositions are frequently dedicated to their mothers. Some suggestions are included in the study to help teachers develop the creative power of children.

### Bibliography

1. AZOFEIFA, ISAAC FELIPE. "Problemática de la segunda enseñanza." (Problems of Secondary Education.) *Revista de la Universidad de Costa Rica* (San José, Costa Rica), June 1954.
2. CRUZ GONZÁLEZ, ADRIÁN. *La educación primaria en el Proyecto Piloto de Educación Rural*. (Primary Education in the Pilot Project of Rural Education.) San José, Costa Rica: Misión de Asistencia Técnica de Unesco, 1954. 135 p. (Offset)
3. GAMBOA, EMMA. *Educación primaria en Costa Rica* (síntesis de su tesis doctoral y recomendaciones). (Primary Education in Costa Rica: Summary of Doctoral Dissertation with Recommendations.) San José, Costa Rica, 1952. 29 p.
4. KARSEN, SONJA. *Desarrollo educativo de Costa Rica con la asistencia técnica de la Unesco, 1951-54*. (Educational Development of Costa Rica with the Technical Assistance of UNESCO, 1951-54.) San José, Costa Rica: Ministerio de Educación Pública, 1954. 175 p. (Offset)
5. MINISTERIO DE EDUCACIÓN PÚBLICA DE COSTA RICA (COMISIÓN INTEGRADA POR GAMALIEL CABEZAS C., JORGE ARCE C., EDGAR GONZÁLEZ C., CARLOS CAMAÑO R., y HUMBERTO MUÑOZ U.). *Estudio realizado sobre la segunda enseñanza en Costa Rica*. (A Study of Secondary Education in Costa Rica.) San José, Costa Rica: Comisión del Ministerio de Educación, 1954.
6. MINISTERIO DE EDUCACIÓN PÚBLICA DE COSTA RICA. "Investigaciones y Proyectos de la Misión de Asistencia Técnica de la Unesco." (Research Projects of UNESCO's Mission of Technical Assistance.) San José, Costa Rica: *Revista El Maestro*, 1952. p. 188-277.
7. MINISTERIO DE EDUCACIÓN DE LA REPÚBLICA DEL ECUADOR. "Pruebas de eficiencia." (Tests of Efficiency.) *Informe del Ministerio*, 1954. p. 167.

8. MIRÓ, CARMEN. "Estudio sobre capacidad económica de los estudiantes universitarios a base del Censo levantado en agosto de 1950." (Memorándum a Alberto de St. Malo, Decano de la Facultad de Ingeniería y Arquitectura.) (Memorandum to Dean Alberto de St. Malo, Including a Study of the Economic Status of the Students of the University of Panama, Based on the Census of August 1950.) *Universidad* (University of Panama) 32: 31-33; Second Semester 1952-53.
9. PITTMAN, MARVIN S. *Algunos problemas educativos de Costa Rica*. (Some Educational Problems of Costa Rica.) San José, Costa Rica: Ministerio de Educación Pública, 1954.
10. ST. MALO, ALBERTO DE. "Breves anotaciones para un plan de reformas universitarias." (Brief Notes on a Plan for University Reforms.) *Universidad* (University of Panama) 32: 11-29; Second Semester 1952-53.
11. SALGADO DE CARBO, LEONOR. "Los documentos psicológicos—el dibujo libre a colores y la composición escrita libre." (Two Psychological Documents—Free Drawing in Color and Free Written Composition.) *Revista Ecuatoriana de Educación* 17: September-October 1951.



## ***Section C: Puerto Rico***

ISMAEL RODRIGUEZ BOU

**E**DUCATIONAL research in Puerto Rico from 1950 to 1956 has been served mainly by two agencies: the Office of Research of the Superior Council on Education and the Division of Educational Research and Statistics of the Department of Education.

The Superior Council on Education, which is the governing board of the University of Puerto Rico, was empowered by law, when it was created in 1942, to conduct research on the most pressing educational problems of Puerto Rico and to place the findings of such research at the disposal of the educational system of the Island. Research has been conducted in four major areas: illiteracy, adult education, the language arts in the elementary school, and academic achievement in the university.

The Division of Educational Research and Statistics of the Department of Education was organized in the school year 1949-50 to supersede the former Division of Statistics. After this reorganization was effected, the division was given the responsibilities of developing the research and statistical programs of the department of education, which specifically included the following activities: conducting research studies on educational problems; constructing, standardizing, and applying tests for school use; preparing personality studies; conducting psychological research in reading; participating in the planning, execution, and evaluation of technical aspects of teaching; and collecting, disseminating, and interpreting statistics about the school system of Puerto Rico.

### **Administration**

Three research projects conducted by the Superior Council on Education were carried on for the administration at the University of Puerto Rico. The first two were conducted prior to 1950 and dealt with the high-school academic index as a criterion of admission to the university and with academic achievement at the university level, respectively. The third project (1) was conducted at the request of the Committee on Human Resources appointed by the Governor of Puerto Rico to plan an economic program for the Island up to 1970. In its educational aspect, the study included such items as plant facilities, distribution of teachers, work programs of the faculty, student load, student guidance prior to entering the university, and the coordination of the university with the public high schools of the Island.

At the other extreme, the Division of Educational Research and Statistics of the Department of Education conducted a study of failures in the first grade (12). As a result promotion policies in the school system were re-examined, and there has since been a marked reduction in overageness of pupils in the elementary schools, especially in Grades I and II.

The Office of the Registrar of the University of Puerto Rico (24) developed entrance examinations for incoming students for the years 1950, 1952, 1954, and 1955. Scores are indicated as percentiles for applicants graduating from high schools—more than 5000 applications in each case. This same office established relations between the scores earned by the students in their entrance examinations and their high-school index and the grades obtained by them in their freshman year at the University of Puerto Rico (25). The Superior Council on Education, too, had previously conducted a study along the same lines.

### Educational Measurement

One of the first tasks undertaken by the Division of Educational Research and Statistics of the Department of Education was that of preparing the necessary testing instruments in Spanish adapted to the Puerto Rican environment. Even as late as 1950, virtually all the instruments of educational measurement used in Puerto Rico were mere translations of others originally prepared for English-speaking children. No attempt had been made to conduct the necessary studies to adapt them for use in Puerto Rico.

The Division of Research and Statistics decided, therefore, first to translate into Spanish and adapt existing effective instruments originally prepared in English and, secondly, to prepare original tests for use in Puerto Rico.

One of the major areas of activity was that of intelligence. The initial work was undertaken in the field of individual testing, for which it was decided to use the *Wechsler Intelligence Scale for Children* and the *Revised Stanford-Binet Form L*.

A series of studies was conducted with a view to translating and adapting these two scales, which culminated in the publication of manuals (26, 23) for the *Wechsler Scale* in 1951-52 and for the *Stanford-Binet* in 1952-53. These manuals contain, in addition to instructions for administering the tests, the criteria for scoring and a brief report on the studies on which the adaptations were based. Moreover, the manuals present special norms for Puerto Rico for these tests.

Altho the initial research was in the field of individual intelligence tests, it was recognized from the outset that the major efforts of the Division would necessarily have to be in the field of group tests because of the large enrolment in the schools of Puerto Rico. One major series of tests, the *Cooperative Inter-American Tests* (comprising tests in general ability, reading, natural sciences, social studies, and language usage), was already available. This series had been prepared under the direction of Herschel T. Manuel of the University of Texas with the cooperation of staff members of the Department of Education of Puerto Rico, the University of Puerto Rico, and the University of Texas. It represented a pioneer attempt to produce parallel tests in Spanish and English. The

complete series was published by the Cooperative Test Bureau of the Educational Testing Service in 1950. Special norms for Puerto Rico were prepared for these tests.

Another instrument which the Division of Educational Research and Statistics tried out was the *Goodenough (Draw-a-Man) Intelligence Test*. It was found suitable for use in the primary grades, especially with children between the ages of five and 10. Hence, a Spanish manual was prepared which contained instructions for administering and scoring the test as well as the norms for Puerto Rico (15). A special drawing sheet was also prepared for this test.

A brief explanation of some of the problems encountered in adapting the *Goodenough Test*, as well as the *Wechsler* and *Stanford-Binet* is given in a paper presented by Roca (21). Roca also summarized his work in the measuring of intelligence of Puerto Rican children with these scales. The results indicate that in general the Puerto Rican child will score lower on them than does the American child. With the *WISC*, the average IQ for Puerto Rican children was found to be 87.94, and with the *Revised Stanford-Binet*, Form L, it was 95.65. In the case of the *Goodenough Test* the norms for the different ages were also found to be lower, with the exception of ages five and six, where the children had been selected from private schools. There is no doubt that no matter how well an intelligence scale is adapted from one culture to another, there are cultural differences which will make the children from the second culture score lower than those from the first.

The Division of Educational Research and Statistics also translated into Spanish and adapted the manuals of the *Minnesota Spatial Relations Test* (18), and the *Minnesota Rate of Manipulation Test* (17).

A general ability test for use in the primary grades of Puerto Rico is now under development. Two forms of the experimental edition were printed during the first semester of the school year 1955-56 (13).

At the request of the U. S. Army, the Division of Educational Research and Statistics undertook the preparation of tests for the classification of recruits in Puerto Rico. The Army had been utilizing a Spanish translation of a test prepared originally in English for use with recruits in the United States. There was dissatisfaction with the Spanish version of this test; it was thought desirable to obtain a test which would be more effective in classifying Puerto Ricans. The division was commissioned to construct two forms of a test consisting of two parts: Spanish vocabulary and arithmetic reasoning. These two parts, together with the block counting part of the Army test, were printed as a confidential test which is being used by the Army at present.

### Educational Psychology

An analysis of the basic readers used in the elementary schools of Puerto Rico conducted in 1948 revealed that many of them were not

in keeping with our physical environment and with the idiosyncrasies, needs, and interests of the Puerto Rican child. The illustrations as a rule misrepresented our people, our ways and customs, our flora and fauna, our colors and light intensity. Most of the books were originally written for children of other countries and were translated into Spanish for use in our schools. The study (6) gave opportunity to the elementary-school children of Puerto Rico to express their preferences in regard to the colors and types of illustrations which they would like to see in their reading textbooks.

### Guidance and Counseling

With the extension of educational opportunities to all pupils of school age, especially in the junior and senior high-school levels, and with an extensive industrial program going on, there is urgent need for instruments to help in the guidance, counseling, and placement of pupils. This accounts in part for the emphasis placed on the translation and adaptation of questionnaires, classification tests, and vocational inventories and on the construction of similar instruments especially fit to serve the children of Puerto Rico. Some work has been done along both lines by the Division of Educational Research and Statistics of the Department of Education.

*The Sims Score Card for Socio-Economic Status* was translated, adapted, and published under the Spanish title of *Cuestionario Sims sobre el estado socioeconómico* (8). The manual contains the results of the study and norms for Puerto Rico (9).

A test of general classification (14) was published for use in the junior high school and constitutes the first of a series of tests to be prepared in the field of industrial psychology. It is a modification of a test originally prepared by Bunker at the University of Puerto Rico. A manual of instructions accompanies the test.

The first test constructed by the division in its effort to provide measuring instruments especially designed for use in Puerto Rico was a vocational interest inventory for high-school students, Spanish and English versions, prepared by Roca (19) as part of his doctoral dissertation. The Spanish edition was later improved and a special IBM answer sheet adapted to machine scoring was prepared. The inventory was designed to yield scores corresponding to the following areas: fine arts, language, mechanics, science, numbers, clerical activities, and helping and controlling people. The manual of instructions contains norms by grade and sex (20).

The division also prepared and published a personality questionnaire for secondary-school students (11). Its purpose is to discover pupils with personal problems; it is used with an IBM answer sheet. A manual of instructions accompanies the test (10).

### Language Arts

One of the most neglected areas in the educational field in Puerto Rico, according to the survey carried on by the Research Division of the Superior Council on Education, was the teaching of the vernacular (Spanish). Accordingly several studies on the subject were conducted. First among them was a word count in Spanish (7).

This research project, which extended over six years, was undertaken mainly to provide vocabulary lists for the writing of textbooks in reading for the elementary schools. The count utilized 7,066,637 running words from the following sources: oral speech and written compositions of school children and adults, religious material, radio scripts and programs, free and controlled association, newspapers and magazines, school texts, Buchanan's Spanish Word Count, and Rodriguez and Casanova's Word Count. Due importance was given to oral sources, heretofore ignored in most word counts in other languages.

The study appears in two volumes (three parts). The total number of lexical units is 20,542; the inflectional units, 62,888. The total of different words amounts to 83,430. Volume I contains the 10,000 most frequent lexical units arranged in alphabetical order, with frequencies and ranks; and the 20,000 most frequent inflectional units, in alphabetical order and also by ranks and frequencies. It contains, in addition, the lexical units with frequencies below 16. Volume II includes the weighted frequencies of each of the 10 sources studied. This Spanish Word Count was published jointly by UNESCO, the Organization of American States (OAS), and the Superior Council of Education of Puerto Rico.

Oral and written language in the elementary school was the subject of three studies conducted by the Superior Council on Education. The first dealt with the errors of written language committed by elementary-school pupils; the second dealt with their errors in syntax and morphology in oral Spanish. These two studies were based on the errors revealed in the students' compositions collected as one of the sources of vocabulary for the Spanish Word Count, and served as the basis for the third monograph on the teaching of the vernacular (2). This monograph expounds methods of teaching different phases of oral and written Spanish at the elementary-school level and suggests materials and activities which may be used to aid in correcting the language errors pointed out in the two previous works.

Another study, useful in securing words of equivalent difficulty in English and Spanish for translating from one language into the other, is the doctoral dissertation of Rodriguez Bou, Permanent Secretary of the Superior Council on Education and Director of Research for this organization (22). This work is useful, too, in teaching Spanish vocabulary to English-speaking students and English vocabulary to Spanish-speaking students.

Jiménez Hernández (16) has done historical research at the University of Puerto Rico in the methodology of teaching reading; his work extends from the early investigations conducted in Europe about the middle of the nineteenth century up to the studies and research carried on by William S. Gray.

### Special Programs

Research on illiteracy and the problem of adult education was badly needed in Puerto Rico in order to have available the information needed when money was appropriated to deal with this problem, which by 1950 was still of very serious proportions. The federal Census of that year revealed approximately 25 percent illiterates among the population 10 years of age and over. Five research studies on the subject were conducted by the Superior Council on Education in the last decade. Three of them are previous to 1950.

By 1952 it was felt necessary to gather in one volume detailed information related to adult education. The literature on this topic is abundant in English, but very scarce in Spanish. Furthermore, there is an acute need for such material in other Spanish-speaking countries where illiteracy is a problem of serious proportions.

Accordingly a study was conducted to provide the necessary information (4). Part I of this study contains chapters on the philosophy and methodology of adult education; the psychology, interests, and needs of adults; the training of teachers for work in adult education; and the preparation of appropriate instructional materials for the teaching of adult illiterates. Part II contains a descriptive inventory of the agencies which participate in adult education activities in Puerto Rico as well as an appraisal of the work performed by each agency.

Five basic texts, (*Let's Go to School*, *The Workers*, *Citizens of a Democracy*, *Let's Take Care of Our Health*, and *Worthwhile Recreation*), to teach reading to adults were prepared in 1952. These five books—a primer and four readers—were prepared and tested for two years with groups of adult illiterates. They are based on five areas of interest and need; namely, education, work, citizenship, health, and recreation. They were written with controlled vocabulary and are used to teach reading in the primary level of the program of literacy work with adults.

A handbook (5) was prepared to describe and illustrate the method and the reading materials developed to teach adult illiterates how to read and write. It contains sample units and detailed procedures for teaching different phases of reading, writing, and arithmetic. The original mimeographed edition of 1953, used with the first two experimental groups, was revised in 1955 to incorporate the additions and modifications that were deemed advisable after the methodology was given an Island-wide tryout.

The Superior Council on Education conducted an analytical study of radio broadcasting in Puerto Rico (3). For approximately three years



radio programs of local stations were analyzed from tape recordings and shorthand records; scripts were studied; and questionnaires and interviews used to gather pertinent information. The study went into several fundamental aspects of broadcasting; exposed its problems, attainments, and defects; and suggested means for their improvement. It covered the following aspects: (a) an introductory consideration of radio as a vehicle of information, communication, recreation, and expression, especially as contrasted with the movies and the press; (b) a brief history of radio broadcasting; (c) functions of broadcasting in the United States and in other countries of the world; (d) the physical aspects of broadcasting; (e) commercials and news commentaries; (f) musical, religious, and educational programs; (g) children's programs; and (h) suggestions for script writers.

### Summary

Educational research, as may be seen from the studies conducted by the Superior Council on Education and the Department of Education as well as by individual initiative, is playing a part of increasing importance in Puerto Rico. Even tho the research projects are limited in scope and number, the findings are already helping to orient educational processes.

### Bibliography

1. CONSEJO SUPERIOR DE ENSEÑANZA. *Análisis de la matrícula universitaria y sus proyecciones para el futuro*. (Analysis of University Enrollment and Its Future Projections.) Santurce, Puerto Rico: Plus Ultra, 1955. 103 p. (Offset)
2. CONSEJO SUPERIOR DE ENSEÑANZA. *Apuntes para la enseñanza de la lengua hablada y escrita en la escuela elemental*. (Pointers for the Teaching of Oral and Written Language in the Elementary School.) Madrid, Spain: Ograma Press, 1954. 303 p.
3. CONSEJO SUPERIOR DE ENSEÑANZA. *Caminos del Aire*. (Airways.) Rio Piedras: University of Puerto Rico, 1951. 349 p.
4. CONSEJO SUPERIOR DE ENSEÑANZA. *Educación de adultos*. (Adult Education.) Rio Piedras: University of Puerto Rico, 1952. 365 p.
5. CONSEJO SUPERIOR DE ENSEÑANZA. *Manual para la enseñanza de lectura y escritura a adultos analfabetos*. (Manual To Teach Reading and Writing to Adult Illiterates.) San Juan, Puerto Rico: Department of Education Press, 1955. 61 p. (Offset)
6. CONSEJO SUPERIOR DE ENSEÑANZA. *Preferencias cromáticas y tipos de ilustraciones—Expresión de los alumnos de escuela elemental*. (Preferences in Colors and Illustrations Expressed by Elementary School Children of Puerto Rico.) Mexico: Editorial Orión, 1950. 123 p.
7. CONSEJO SUPERIOR DE ENSEÑANZA. *Recuento de vocabulario español*. (Spanish Word Count.) Baltimore, Md.: Waverly Press, 1952. 668 p.
8. DEPARTMENT OF EDUCATION OF PUERTO RICO. *Cuestionario Sims sobre el estado socioeconómico*. (Sims Score Card for Socio-Economic Status.) San Juan, Puerto Rico: the Department, 1952. 4 p.
9. DEPARTMENT OF EDUCATION OF PUERTO RICO. *Cuestionario Sims sobre el estado socioeconómico—Manual de instrucciones*. Edición revisada. (Manual of Instructions for Administering Sims Questionnaire on Socio-Economic Status. Revised edition.) San Juan, Puerto Rico: the Department, 1952. 19 p. (Mimeo.)

10. DEPARTMENT OF EDUCATION OF PUERTO RICO, DIVISION OF EDUCATIONAL RESEARCH AND STATISTICS. *Cuestionario sobre la personalidad—Manual de direcciones*. (Manual of Instructions for the Personality Questionnaire for Secondary School Students of Both Sexes.) Hato Rey, Puerto Rico: Department of Education Press, 1954. 16 p. (Offset)
11. DEPARTMENT OF EDUCATION OF PUERTO RICO, DIVISION OF EDUCATIONAL RESEARCH AND STATISTICS. *Cuestionario sobre la personalidad para estudiantes de escuela secundaria (ambos sexos)*. (Personality Questionnaire for Secondary School Students of Both Sexes.) Hato Rey, Puerto Rico: Department of Education Press, 1954. 11 p. (Offset)
12. DEPARTMENT OF EDUCATION OF PUERTO RICO, DIVISION OF EDUCATIONAL RESEARCH AND STATISTICS. *Estudio sobre los fracasos en primer grado en las escuelas públicas de Puerto Rico*. (Study of Failures in the First Grade in the Public Schools of Puerto Rico.) San Juan, Puerto Rico: Department of Education Press, 1950. 32 p. (Offset)
13. DEPARTMENT OF EDUCATION OF PUERTO RICO, DIVISION OF EDUCATIONAL RESEARCH AND STATISTICS. *Prueba colectiva de capacidad puertorriqueña, Formas A y B*. (Group Test of Mental Ability for Puerto Rico, Forms A and B.) Hato Rey, Puerto Rico: Department of Education Press, 1955.
14. DEPARTMENT OF EDUCATION OF PUERTO RICO, DIVISION OF EDUCATIONAL RESEARCH AND STATISTICS. *Prueba general de clasificación, nivel intermedio*. (General Test for Classification, Intermediate Level.) Hato Rey, Puerto Rico: Department of Education Press, 1954. 14 p. (Mimeo.)
15. GOODENOUGH, FLORENCE L. *Prueba de inteligencia Goodenough*. (Goodenough Intelligence Test.) Translated into Spanish and adapted. San Juan, Puerto Rico: Department of Education Press, 1953. 37 p.
16. JIMÉNEZ HERNÁNDEZ, ADOLFO. *El niño y la lectura*. (Reading and the Child.) San Juan, Puerto Rico: La Milagrosa, 1952. 263 p.
17. *Prueba Minnesota de Rapidez de Manipulación. Manual para administrarla*. Traducida al español y adaptada. (Manual in Spanish for Administering the Spanish Version of the Minnesota Rate of Manipulation Test.) San Juan, Puerto Rico: Department of Education Press. 13 p. (Mimeo.)
18. *Prueba Minnesota de Relaciones Espaciales—Direcciones para administrarla*. (Directions for Administering the Spanish Version of the Minnesota Spatial Relations Test.) San Juan, Puerto Rico: Department of Education Press. Two pages and a leaflet for notations. (Mimeo.)
19. ROCA, PABLO. *Inventario de intereses vocacionales para estudiantes de escuela superior*. (Vocational Interests Inventory for High School Students.) Hato Rey, Puerto Rico: Department of Education Press, 1954. 13 p. (Offset)
20. ROCA, PABLO. *Inventario de intereses vocacionales para estudiantes de escuela superior—Manual de Instrucciones*. (Manual of Instructions To Accompany the Vocational Interests Inventory for High School Students.) Hato Rey, Puerto Rico: Department of Education Press, 1954. 21 p. (Offset)
21. ROCA, PABLO. *Problems of Adapting Intelligence Scales from One Culture to Another*. San Juan, Puerto Rico: Department of Education Press, 1955. 15 p.
22. RODRIGUEZ BOU, ISMAEL. *A Study of the Parallelism of English and Spanish Vocabularies*. Doctor's thesis, University of Texas. San Juan, Puerto Rico: Imprenta Venezuela. 313 p.
23. TERMAN, LEWIS M., and MERRILL, MAUD A. *Escala de Inteligencia Stanford-Binet, Revisada. Direcciones para la administración de la Forma L*. (Directions for Administering Form L of the Stanford-Binet Revised Intelligence Scale.) Translated into Spanish and adapted. San Juan, Puerto Rico: Department of Education Press, 1953. 101 p. (Offset)
24. UNIVERSITY OF PUERTO RICO, OFFICE OF THE REGISTRAR. *Entrance Examination*. Restricted publication. University of Puerto Rico Press, 1950, 1952, 1954, 1955. (Offset)
25. UNIVERSITY OF PUERTO RICO, OFFICE OF THE REGISTRAR. *Relation Between Entrance Credentials and Grades Earned by the Freshman Classes Entering in 1952 and 1953 at the University of Puerto Rico*. Río Piedras, Puerto Rico: University of Puerto Rico Press, September 1954. 1 p. (Mimeo.)
26. WECHSLER, DAVID. *Escala de Inteligencia para niños*. (Intelligence Scale for Children.) Translated into Spanish and adapted. San Juan, Puerto Rico: Department of Education Press, 1951. 129 p. (Offset)

## CHAPTER VII

### Scandinavian Countries:

### Denmark, Norway, and Sweden

#### *Section A: Denmark and Norway*

AGE HAUGLAND

THE close contacts existing between Denmark and Norway from both the geographical and cultural standpoints are reflected also in extensive traditional associations in the field of knowledge. In both countries, for example, there is a great deal of overlapping of educational with psychological research both as regards the content and the personnel employed.

Danish educational research, however, has had its own characteristic line of development, a broad account of which is essential if the position is to be fully understood.

#### Developments in Denmark

In Denmark, educational research in the strict sense of the term has been hampered by disinclination on the part of the University to recognize the scientific study of education as an independent subject separate from philosophy. Efforts directed toward setting up a chair of educational science did not until quite recently (1955) lead to any concrete result. K. Grue Sørensen, the professor nominated to this post, had until his appointment been engaged in school work on the practical side, while his literary output had been predominantly philosophical in character.

Earlier participants in the principal educational discussions had been chiefly teachers and philosophers altho there had always been a certain amount of contact with the University Psychological Laboratory (set up in 1886). Thus there was the Association for Experimental Pedagogy, which began its organized activities in this sphere in 1914, operating predominantly thru educators but assisted also by a professional advisory council. In its periodicals and yearbooks this association published reports on a number of inquiries altho the publications reached only a somewhat limited circle.

A more permanent and more official organization, the Committee for School Psychological Research was set up in 1923 with the support of both governmental and municipal authorities. The main task of this committee was to adapt psychological tests for use in Danish schools. It prepared Danish versions of the well-known *Binet-Simon* and *Dearborn* intelligence tests and produced general progress tests for use in connection with school subjects calling for a measure of skill or dexterity.

Even the comprehensive work of this organization, however, in which a great many Danish educators were engaged (several of them with psychological training), was confined principally to educational circles and only to a very limited extent was the work made accessible to a wider public by means of published reports.

Following the setting up of this committee, activities were further extended by the establishment of school psychology clinics in the various municipalities of Greater Copenhagen. The staff employed at these clinics, all of whom had originally been practical schoolmasters, continued their work by devoting their attention to a number of psychological and educational problems, but this work, too, was made available in published reports to only a limited extent.

In view of the fact that up to 1955 there had never been any separate chair of educational science, those educators concerned with educational research problems maintained contact with the University chiefly thru the University Psychological Laboratory where many of them had received their training. Several of the investigations undertaken were carried on under the direction of that Laboratory; e.g., an inquiry into the comprehensibility of texts in which all the substantives have initial capitals (as in German) as compared with other texts in which the substantives have small initial letters (as in English), an investigation conducted in connection with the Danish spelling reform of 1948.

As will be seen from what has been said so far, a peculiar characteristic of educational investigations in Denmark was that they were very much restricted to meeting the prevailing demands of practical everyday work, no great importance having been attached to systematizing the work or publishing the results.

A decisive development on the organizational side took place in 1955 when in addition to the establishment and manning of the chair of educational science previously mentioned, a Danish Pedagogical Research Institute was also set up.

### **Presentday Educational Research in Denmark**

The central organization for Danish educational research is now the Danish Pedagogical Research Institute which, so far as administration is concerned, comes directly under the Ministry of Education. The Institute operates on fixed annual grants, and according to the program laid down it is to be divided into five departments: (a) a department for didactic investigations, (b) a department for basic educational and psychological research, (c) a department for tests and examinations, (d) a department for educational research activities, and (e) a statistical department.

Three of these departments commenced operations in 1956. The personnel and portfolio of the Committee for School Psychological Research previously referred to have been taken over by the Danish Pedagogical Institute. The director, Erik Thomson, is a former school psychologist, and

the permanent staff of the Institute is recruited predominantly from school psychology clinics. In addition, there is a professional consultative council attached to the Institute, the University being represented on it.

At the present time (September 1956) the Institute is engaged on the following tasks:

- An inquiry on a national scale to establish the value of educational tests as a basis for selection

- Inquiries regarding the problems of maturity and preparatory instruction in the case of school beginners, with special reference to the development of reading ability

- Revision of spelling lists to bring them into line with the new system of orthography

- An examination of the extent to which and the reasons why children remain in a class for more than one school term

- Investigation of the influence of typography on the reading ability of children weak in the subject

- Investigation into the benefit of additional special instruction as compared with that of instruction in special classes

- Standardization of general progress tests in silent reading as applied to village schools

- Elaboration of methods of assessing a child's emotional adjustment to a group

- Elaboration of forms to be used by teachers in recording their observations

- Investigation of the extent to which intelligence tests and character-assessment tests as employed by the armed forces in the case of national servicemen can be used successfully with school children, and a determination of how a child's development and the system of instruction affect the results attained in such tests

- Investigation of whether a reduction of lesson hours in a particular subject produces a reduction of effect

- Preliminary investigation of some problems concerning young people

- Investigation into the relationship between the speed of reading and the frequency of error.

K. Grue Sørensen, a member of the Research Institute's professional advisory council, and at the same time attached to the University of Copenhagen, published in 1956 the first volume of history of education (2).

The Danish Pedagogical Institute operates in constant and close contact with the University Psychological Laboratory, whose director, E. Tranekjaer Rasmussen, has been keenly interested in educational psychology, particularly the psychology of thought and the psychology of problem-solving (1).

Contact is also maintained with the school psychology clinics and with the *Emdrupborg* experimental school set up by the municipality of Copenhagen in 1948 and run by Anne Marie Norvig.

An important function in Danish education is taken care of by the State Pedagogical Study Collection in Copenhagen, founded originally as a school museum. It includes a comprehensive specialized library covering all branches of education, schoolwork, and methods of teaching, together with collections of instructional material and pupils' work. The Study Collection comes directly under the Ministry of Education.

The most important publications in connection with Danish educational research are the periodical *Nordisk Psykologi* (Scandinavian Psychology), a joint periodical for all Scandinavian countries issuing (in collaboration with *Acta Psychologica*) certain numbers in English. A *Leksikon for Opdragere* (Teachers Encyclopedia) was published in 1953, its principal editor being K. Grue Sørensen.

Staff for organized educational research work is recruited from among practical educators who have access to the course in educational psychology at the University of Copenhagen started in 1944 (the course is at present under revision). However, there are very few persons connected with educational research who have completed the full course for the degree of Master of Psychology with its extremely theoretical requirements.

In addition to the work done by the Committee for School Psychological Research and the tasks on which the Danish Pedagogical Institute is now engaged, mention may be made of the investigations into the question of school ability carried out by the school psychologist Henning Meyer and others, as well as the investigations into the same problem now being conducted by the school psychologist S. A. Tordrup. It may also be mentioned that in 1955 the Copenhagen Municipal Schools Council made an attempt to arrive at a statistical basis for awarding marks in connection with what is known as the *Mellemskoleprøve* (Middle School examination).

Investigations into the structure of the school class and the mutual relationship between pupils and teachers and of pupils one to another have been carried out by H. C. Rasmussen. With the object of investigating the problem of "colored literature" (comics and strip cartoons), psychological inquiries with recorded results have been conducted on the same basis as similar investigations in other countries; these investigations were conducted by Jesper Florander, the present head of department at the Danish Pedagogical Institute. The Ministry of Education has appointed a commission to deal with this problem, with representatives drawn from all walks of life.

Finally, in this connection, reference must be made to the comprehensive report on conditions among young people, issued in 1948-1952 by what is known as the Youth Commission, a body corresponding to the Swedish *Ungdomsvårdskommitté*. Special mention must also be made of a statistical report entitled *Den Danske Ungdom* (Danish Youth) published in 1951; an extremely wide-scale inquiry into youth and leisure (*Ungdommen og Fritiden*) published in 1952; and the report, *Den Tilpasningsvanskelige Ungdom* (Maladjusted Youth), published in 1952.

### Developments in Norway

In Norway, too, there are very close connections between educational research and psychological research, and in both these fields enormous



strides have been made during the last few decades. Organized research as such dates from 1935 when the municipal schoolboards in Oslo set up the Committee for Educational Research. In 1936 the University of Oslo set up an Educational Research Institute and a chair of educational science in conjunction therewith. Some educational research has been carried out by the Teachers High School at Trondheim, altho the main purpose of this institution is to train teachers for elementary schools.

Finally, it may be mentioned that on the initiative of teachers organizations a special fund has been established under the name, Norwegian Fund for Educational Research (Norsk pedagogisk forskningsfond).

Educational (and psychological) research in Norway—to a greater extent than is the case in Denmark—has been in the hands of people who were in a position to devote themselves exclusively and systematically to the problem of research. The enhanced opportunities for systematic research work are presumably responsible for the fact that in the Norwegian language there are far more publications dealing with educational matters and addressed to the general public.

### Presentday Educational Research in Norway

The Educational Research Institute at the University of Oslo is directed by Johs. Sandven, who in 1948 succeeded the highly respected Helga Eng. The Institute's fixed grants are very limited, and apart from the director it has no permanent staff attached to it. The necessary personnel is taken on as occasion arises and to the extent permitted by available funds. Since 1950 the Institute has had considerable support from the Norwegian General Scientific Research Council (Norges Almenvitenskapelige Forskningsråd), a body set up to administer surplus profits derived from football pools.

One of the most important tasks of the Educational Research Institute has been to work out standard Norwegian versions of the Stanford revision of the *Binet* tests. This work was completed in 1954.

In addition to this, the Institute has prepared three series of ability tests for children from six to 15 years of age. This work was based on data collected from about 10,000 children and completed in 1953. Subsequently there was a re-examination of the children who took part in the original tests, for the purpose of determining the prognostic value of such tests. These investigations are now being continued by an inquiry into general social behavior in the age groups subjected to these ability and prognosis tests.

The Educational Research Institute is also working on investigations into the difficulties experienced by elementary-school children in connection with fundamental arithmetical processes, with the object of arriving at a method of diagnosing difficulties in arithmetic. It is also conducting inquiries relating to first steps in reading.

Eva Nordland conducted an inquiry and published as a Treatise in 1955 "The Connection Between Social Behaviour and Upbringing, Including a Study of Parental Relationships as a Determining Factor." The subjects studied were children below school age. Systematic observations were made of the children's conduct in the kindergarten, and at the same time inquiries were made regarding the relationship of their parents by means of visits to the homes. It was shown that definite connections exist between characteristic features in the parents' methods of bringing up their children or in their attitude one to another, and features in the behavior of the children themselves.

The Educational Research Institute also published a report on a short investigation into the film-going habit among children and interest in films among young people 12 to 18 years of age.

At the present time the Institute is conducting investigations into the attitude of children toward various cultural factors: Subjects studied include newspaper reading and radio listening by children from 12 to 15 years of age, the reading of comics by children and the connection between such reading and the children's behavior and ideas, and children and the theater.

Reports on the activities of the Educational Research Institute are issued in Norwegian in the form of monographs or in the series of collected pamphlets entitled *Forskning og Danning* (Research and Education).

The Committee for Educational Research (set up by the school authorities for the Oslo municipalities) operates without any fixed budget, grants being allocated as occasion arises. Of the work done in recent years, mention may be made of Ribsskog's inquiry into the extent to which inherent ability is matched by proficiency in elementary-school work, and Haavardsholm's work on truancy in the elementary school. The last study seemed to show that truancy is attributable to a general feeling of frustration leading to regression, daydreaming, and escape.

Helga Eng has continued her studies of child art.

As regards more generally psychological investigations with an educational interest, mention may be made of an inquiry now in progress under the direction of Åse Gruda Skard at the University Psychological Institute in Oslo into the development of children in Norwegian working-class homes. The parents have been interviewed during the eighth or ninth month of pregnancy and the children observed and tested every fourth week during the first year of life. These investigations are still going on.

Jan Smedslund's experimental research into the psychology of the process of learning is also of educational interest. This work was carried out at the Institute for Social Research which receives very large contributions from private concerns for its national research programs. Skard's work on suitability for studying at universities and high schools and R. Rommetveit's treatise on social norms and roles are both of a general psychological nature but are interesting from the educational point of view.

In conclusion, it should also be mentioned that both in Norway and in Denmark work is being done on marking systems used in schools. A committee appointed by the Ministry of Education in 1954, after an analysis of the use of marking in schools as a means of assessing ability, put forward proposals for a radical revision of the marking systems so far employed.

### Summary

Educational and psychological research in Denmark and Norway is still in its infancy. The methods employed in almost all the work discussed have been strictly empirical, and in the majority of cases they have been confined purely and simply to the collection of data. It can scarcely be claimed that any universal tendencies have been revealed by the research carried out.

Conditions have been responsible for the fact that the overlapping of educational research and psychological research in Denmark educational research work has been more closely associated with day-to-day work in schools. At present, representatives of Danish psychological and educational institutions are operating in a number of countries on the organization of important educational problems. On the other hand—and this is a fact not previously mentioned—there is in Denmark a lack of any active orientation toward other countries. There is a great discrepancy between the number of Danish educators able to study abroad and the number of Norwegians who do so. There is reason to believe, however, that in this respect important changes may be expected in the future.

### Bibliography

1. RASMUSSEN, E. TRANEKJÆR. *Bevidsthedsliv og erkendelse. Nogle psykologisk-erkendelsesteoretiske betragtninger.* (The Life of the Mind and Comprehension: Some Psychological Reflections on the Theory of Comprehension.) Copenhagen: 1956. 199 p.
2. SØRENSEN, K. GRUE. *Opdragelsens historie I.* (The History of Education, Vol I.) Copenhagen: 1956. 243 p.

## Section B: Sweden

KARL-GEORG AHLSTRÖM\*

EDUCATION is still rather a young faculty in the Swedish university system. Before 1948, education was taught as a branch of psychology, but at that date education (including educational psychology) was presented as an independent discipline at the University of Uppsala; in 1952 Stockholm University followed suit. An advanced Institute for Pedagogical Studies and Teacher Training was founded in Stockholm in 1956 with a professorship in practical education. In the near future chairs in education and educational psychology are projected for Gothenburg and Lund Universities. As the subject is a young one, research in Swedish education is not extensive.

The very character of the Swedish educational system is now undergoing reorganization. This fact has been a source of inspiration to research workers. Since the following review examines problems related to this reorganization, a brief outline of the reform will be presented first.

In the old Swedish school system all children entered a primary school lasting seven to eight years, with the better pupils leaving between the fourth and sixth year. These entered a secondary school lasting four to five years, at the end of which time a general examination was given—the *realexamen* or General School Certificate. Those who passed the *realexamen*, or had an equivalent background, could enter the high schools, gymnasiums, or as they are known in France, lycées.

The new united school system has a course lasting nine years. Its objectives center on fostering social and personality development. After the first eight years a differentiation of pupils into three lines takes place: IXg theoretical, IXa general, and IXy trade schools. In the ninth year students from the IXg line may be promoted directly into gymnasiums. For some time this school has existed side by side with the old system; arrangements have been made to undertake studies comparing the efficacy of the two institutions.

### Administration

One object of the Swedish school reform is to make education more democratic—to give all social classes equal opportunities for higher education. The goal is for everyone to reach a level of education equivalent to the *realexamen* of the old school system. Now the problem arises: How many people have the mental capacity to profit from an education corresponding to the level of the former *realexamen*? In other words, how great is the "intellectual reserve"?

Fundamental contributions to the discussion were made by Ekman (8) and Sjöstrand (24). Ekman distinguished four types:

\*I wish to thank Robert Enzmann who revised the English Text.

1. An actual intellectual reserve that can be determined or measured as follows: An age group of army conscripts is given IQ tests and divided with respect to levels of education. Then it is ascertained what proportion of the elementary-school group surpasses the score attained by a fixed lowest percent of the *realexamen* group.

2. An actual intellectual reserve in a broad sense. It is manifest that there are abilities, other than those tested, of importance in the scholastic success of an individual. However, because of the great difficulty in defining such variables, it is impossible to measure them.

3. A potential intellectual reserve in a special sense is that which exists at the time children are segregated into secondary schools. It would be possible to estimate this by examining the extent to which a more stimulating environment in the secondary schools increases the original differences between the groups.

4. A potential intellectual reserve in a broad sense. The meaning of this concept is evident from (2) and (3) above.

Sjöstrand was very critical of attempts to determine the reserves or capacities. His strongest objection was that one of the most relevant factors for success in school is the stimulus to knowledge given by a social environment. Ekman's approach is based on an implicit assumption that the total environment in all social groups is intellectually equally stimulating. This assumption was considered untenable by Sjöstrand.

Discussion about intellectual capacities leads to abandonment of the earlier goal, that all children under the new school system should reach an educational standard corresponding to the old *realexamen*. A greater number than previously reach this standard; and pupils who cannot, because of their capacity, are considered, as a matter of principle, to have an equivalent schooling.

That the new school means a more democratic education for the masses is clear when the social background of the highest sections of the new and old schools are compared (27). In the former 1.7 percent came from social group 1, and 11.4 percent from group 5 (the lowest group). In the old school 14 percent came from social group 1 and 0.8 percent from the lowest social group.

### Educational Measurement

Magne (18) investigated whether learning and perceptive tests correlated better with school marks than did intelligence tests. It was found that their prognostic value was considerably inferior to that of the intelligence tests. Most correlations were not significant.

Edfeldt (5) succeeded better when trying to predict reading readiness on the basis of a reading-reversal-tendency test. The test contained perceptual items like those with which the individual is confronted when learning to read. The split-half reliability amounted to .91-.94, and retest coefficients of .84 were reached. The test was standardized for age groups of 3-8 years. The number of reversal errors showed a clear decrease with age. The diagnostic power of the method was tested on two groups of children having reading difficulties of varying degrees altho not with pronounced

reversal tendencies, and on a group of normal children. The groups were matched according to sex, age, school, class, and the like. Differences between groups were marked. Prognostic value of the method was evaluated by means of a follow-up investigation and found to be very good. Out of 45 pupils reported to have marked reading difficulties, 31 showed a result in the reversal test that was below the tenth percentile. Edfeldt's investigation is of especial interest because earlier investigators reported negative results with reversal tests. The cause of the discrepancy seems to be that Edfeldt's test is based entirely on tasks of the matching type and on letter symbols or figures of a similar kind.

Edlund (6) studied the predictive value of a school maturity test in a follow-up investigation of 83 children. Prognostic power of the test was low. The most prognostic subtests were tests in Swedish and arithmetic. However, it is doubtful whether such general knowledge tests should be included in a maturity test since ambitious parents can force their children in the subjects covered. Edlund's intensive investigation showed that under such circumstances the tests lose their predictive value.

An attempt at predicting school success by noncognitive methods was made by Blomqvist (3). A comparison was made between secondary-school pupils who had remained an extra year in the first, second, or third grades, and a random sample of pupils who had passed these classes successfully. Rating scales were administered to the pupils, the mothers, and the teachers. The highest correlations with success in school were shown by "suitability for studies," "ability to concentrate," "will-power," and "desire for knowledge." Success in school was also significantly related to the parents' level of aspiration as to the pupils' further education and to a more positive parental attitude toward the school. In general it was shown that a more positive study environment was significantly related to success in school. Progress in studies correlated higher with the cultural standard of homes, marital happiness, atmosphere, and tidiness than with density of population and material status. A slight relation was evident between progress in studies and out-of-school interests.

The study atmosphere in the home thus seems to be essential to school success. Maltén (20) investigated to what extent good study habits improved elementary-school marks. By a partial correlation technic he held the attitude of the pupils toward the school, and their intelligence, constant. Correlation between study habits and success in school was zero. A variable that was not checked, but is probably highly relevant, is time devoted by the pupils to their homework. It might be advisable to use broader definitions of the concepts *study habit* and *attitude toward the school*. Both instruments were made exceedingly homogeneous by item analysis. In the same investigation, Maltén found that certain items of the study-habit instrument were significantly related to school success on different intelligence levels. He, therefore, advanced the hypothesis that certain study habits are more effective for children of low intelligence and others for children of high intelligence.



It is characteristic of factor-analytic investigations carried out in Sweden that the investigators have not kept variables independent of each other. Consequently, results of the analysis are dubious, a regrettable fact since such investigations have often been concerned with interesting problems such as Magne's studies (18) on the relation between memory-span tests, perception tests, learning tests, and intelligence tests; Trankell's studies (30) on the relation of left-handedness to certain personality traits; Elmgren's investigations (9) concerning the talent components made use of in certain school subjects; and Björsjö's analysis (2) of spatial, technical, and practical talent. These investigations do, however, contain many good suggestions and hypotheses.

Husén and Henrysson (12) used factor analysis to analyze relations between variables in different tests of knowledge. The object was to illustrate a new field of application for factor analysis; viz., to check to what extent the tests measure just those aspects which they are intended to measure. To attain this, a special variable, such as the school mark of the subject in question, was introduced in each analysis. For example, in an analysis in the subject of reading, the variables were five different reading tests and the pupils' reading grades. It was found that reading grades depended mainly on reading speed. Other results of the analysis are not so interesting since factors were very strongly correlated, due, among other things, to the heterogeneity of the population. The report does illustrate the possibilities of factor analysis.

### **Educational Psychology**

Many aspects of the old and the new schools have been compared with the object of ascertaining whether or not the new and less restricted school can give the same quality of education as the old, if the new school generates better morale among the pupils while developing their sense of cooperation, if the new school is superior to the old in developing a sense of independence and judgment, and if the activity program makes pupils more interested in schoolwork.

#### **Level of Academic Knowledge**

A comparison (26) was made between pupils from the new school and corresponding classes in the old secondary school with groups matched regarding sex, age, intelligence, socioeconomic status, and neighborhood. The tests included Swedish, mathematics, English, and German. In every test the pupils of the old school system were superior.

Sjöstrand (24) held that the most important reason for this outcome was that the population of the new school was more heterogeneous than that of the secondary school where a rigorous selection of bright pupils was made. He suggested that the brightest pupils in the new school are being treated unfairly because the teachers pay too much attention to the dull pupils. Eklund (7) was of the same opinion. He compared intellec-

tually homogeneous and intellectually heterogeneous classes as to their knowledge of English. When two groups equivalent in regard to sex and intelligence were compared, the pupils from the homogeneous classes were superior. Eklund suggested that the teacher's knowledge of the foreign language was of very small importance since the pupils studied English for only one year. Eklund thought that the most plausible explanation was that the more intellectually homogeneous the class, the more effective the teaching in this class. He tried to find support for Sjöstrand's hypothesis that teachers gave more time to dull pupils; his results were not conclusive.

### **Study Habits**

Another goal of the new school is to give the pupils more useful knowledge, e.g., good study habits, while the goal of the old school is more restricted. Such habits are to be learned and strengthened by means of activity programs and special practices. The extent to which pupils of the different types of schools acquired these habits was examined (27). Pupils from the highest class of the secondary school were compared with pupils from the corresponding class of the new school (class IXg) regarding their ability to use a dictionary and to write a summary of an article. The former were more successful in the first test (significant at the 5-percent level) and equal to the pupils from the new school in the other test, seeming to indicate that the special training given pupils of the new school did not yield any marked results. There was, however, one possible source of error. The first test had a very high correlation with intelligence (.74-.80). It is highly desirable that the investigation be repeated with a test that does not put so much stress on intelligence, or that comparisons be made between groups of equal intelligence.

### **Morale and Cooperation**

As to morale, only a few comparisons have been made between the schools. Sociometric studies (25, 28) indicated that the number of isolated pupils is less in the new school. The most plausible hypothesis is that fellowship is favorably influenced by group work existing only in the new school.

Unfortunately no studies have been made regarding influence of activity teaching on the development of ability to cooperate. One of the most urgent tasks for research workers is to discover if such an influence exists, and if so, how strong and durable it is.

### **Interest in Schoolwork**

By using activity teaching and by putting a greater stress on practical subjects in the new school, it was thought that its pupils would be more interested in schoolwork despite the fact that in this type of school there is no differentiation as to intelligence. Investigations hardly confirm this hypothesis.

Follow-ups (24, 25) showed that interest in the study of English, when first presented, was very great in the new school. Instruction in English—a combination of radio and correspondence courses—proved as popular as practical subjects and even more popular than Swedish and mathematics. However, each year interest in schoolwork diminished, especially in English. This was most marked among the boys. Interest in English was least among the least gifted pupils, and it was also among these pupils that interest declined most rapidly.

Follow-ups (25) have been undertaken in the new school and in the old school. The groups studied were equivalent as to intelligence, sex, and neighborhood. After some years the same pupils indicated their interest in 20 different subjects and 25 avocations at school. No differences appeared between the two types of schools with respect to interest in the subjects. In the higher classes it was considered more interesting in the new school than in the old school to work in groups, give a report of something to the class, have class discussions, and to use workbooks. In the new school, pupils showed less interest in private work and like activities.

Thus, investigations seem to indicate that the new school does not promote pupils' interest more than the old. A possible source of error is still inherent in the teacher factor. Teachers in the new schools are generally less able in applying principles of activity teaching than teachers in traditional classrooms are in giving their formal instruction.

### **Educational Sociology**

A goal of the new school is to produce socially well-adjusted personalities, with children learning cooperation and morale more effectively than under the old system. Extensive research has been carried on concerning social interrelations between children in schoolrooms. Only two of the most important are discussed here.

The Swedish pioneer in this field is Johannisson (13); however, Bjerstedt's doctorate (1) is more modern and profound. Bjerstedt found that sociometric status scores are often assumed to be: (a) relatively unaffected by preference method, (b) unaffected by choice aspect or criterion, (c) constant over a period of time, (d) accompanied by the individual's awareness of his own relative sociometric situation, (e) correlated with the degree of "adjustment" and "efficiency" of the individual, and (f) susceptible of similar interpretation in different countries. Except for the last, all these assumptions have been tested by Bjerstedt in his investigations.

The first assumption was tested by means of a correlation analysis including five different methods: paired comparison, rank order, two different rating scales, and the indication of simple choices. The latter was most easily understood by the subjects and was otherwise also more convenient. However, the three first-mentioned methods seemed more closely related to each other than to the other methods.

Testing of the second assumption showed that socio-preferential status seemed to be relatively undifferentiated at early ages. Among older children a greater differentiation appeared.

In general there was a fairly stable number of positive work-mate choices received even over periods longer than one year.

Awareness of choice reception and choice status varied, among other things, with the preference level and the status of individuals involved. Questionnaire data showed that overrejected subjects often perceived themselves as dissatisfied. Low-status children were described by the teachers as problem children and generally inferior with respect to general and physical achievement. They tended to have lower scores on intelligence tests, higher scores in cheating and lying tests, and a lower ability to admit errors. These results concerning adjustment at school are a corroboration of Johannisson's findings (13).

### **Guidance and Counseling**

Another goal of the new school is to promote the development of the pupil's personality. Guidance and counseling are more important in the new school than they were in the old; and at the moment these fields are very popular with research workers.

### **The Problems of Left-Handed Children**

Trankell (30) in his doctoral thesis tried to prove that right-handedness generally is inherited as a Mendelian dominant factor. This theory will not be discussed here. For diagnosing left-handedness, two methods were devised: the impulse scale with which the preferential hand usage of the individual was measured; and the asymmetry test for measuring the relative skill and dexterity of the two hands. Both tests are great improvements on earlier methods; reliabilities and validities are good.

Trankell showed that the left-hander's ability to learn to write with his right hand is directly related to the dexterity of his right hand as compared with his left; furthermore, the stronger the tendency to use the left hand as measured by the impulse scale, the more difficult it was for the child to overcome the obstacle of learning to write with his right hand. The social development of a child seemed to be related to his ability to learn right-handed writing. In general, the better adjusted child succeeded better and more often.

In another investigation Trankell (29) showed that "extremely" left-handed children had just as good a calligraphy as right-handed children. If left-handed children do not train both hands, their handwriting will be good.

### **Discipline**

A preliminary report concerning a recent large-scale investigation of the discipline problem in schools was presented by Husén (11). The

problem was the relation of the home environment of a pupil to his behavior in school. The most significant result of the investigation was that the parent-child contact, and especially the mother-child contact, was most important. Children with lesser contact with their mothers tended to have worse behavior ratings. It was also shown that children from homes with consistent and established behavior and habit patterns tended to have good school behavior ratings.

Some sex differences appeared. If the mother was less child-centered, boys tended to be problem children—more aggressive, disturbing, careless, and the like. The less child-centered mothers had more passive and inattentive girls.

A hypothesis that a discrepancy between educational theory and practice in the home is related to a child's adjustment at school did not hold because correlation between rearing ideology and actual practice was too low; therefore, the discrepancy between the two measures was meaningless.

Marklund (21) studied the same problem and corroborated the above results. He also found that the greater the differences between declared attitudes of the mother and of the father, the more disturbed the pupil seemed to the teacher; likewise the greater the differences between the teacher and the parents, the more disturbed the pupil seemed to the teacher.

### Over- and Underachievement in School

As a measure of over- and underachievement Dureman (4) used the discrepancy between actual achievement and achievement predicted from an intelligence test. Among the 7 percent who most extremely over-achieved, 74 percent were girls; and among the 7 percent who most extremely underachieved 64 percent were boys. No relation existed between over- or underachievement and the socioeconomic status of the children's parents. Behavior trends indicating resistance or opposition to the teacher and norm system of the school were definitely related to underachievement. No differences were found between groups with respect to symptoms characterizing anxiety and tension. Overachievers were characterized by power of concentration, interest and endurance in schoolwork.

### Mental and Physical Development

The idea that differentiation of pupils should occur in the last class of the new school (from which they might go on to work in theoretical, general, or trade subjects) was based on results of Elmgren's investigations (9). Correlation between theoretical and practical ability was positive but very low in a sample of 10-year-olds. The low correlation is explained by the fact that practical ability was defined by the *Minnesota Mechanical Assembly Test*, a complex measure of manual dexterity; theoretical ability was determined by a verbal intelligence test. Correla-

tions showed an increase up to age 15. However, it was impossible to determine whether this increase was actual or corresponded to systematic errors in, for example, the sampling method (10).

Development curves for theoretical and practical ability showed some discrepancies. The latter indicated a growth spurt at the age of 15 which did not exist in the former curves. Elmgren believed the spurt to be conditioned by puberty changes; however, this was not proved because of the unsatisfactory choice of samples.

The concept of late differentiation is based on this growth spurt which is thought to destroy a prognosis at earlier ages; but, as Sjöstrand (24) pointed out, if such a spurt really occurs it is not certain that it destroys the prognosis. Only longitudinal investigations can answer such questions.

Sandels (23) worked with cross-sectional and longitudinal methods as applied to children in the age group one and one-half to eight and one-half. All children were put into situations which gave them the greatest possible freedom for undirected manipulation of material. By making "attractive" material available, activity was induced; then all reactions of the subjects were recorded. Behavior studied included: ordering of objects such as sorting of beads; partitioning and distribution, e.g., the cutting of a cake and distributing slices to dolls; and the collecting of objects, such as balls, in a basket.

The new methodology in the research seemed to make it more reliable than previous studies. The study was based on the hypothesis that development of concrete motor behavior illustrates the development of concepts and that such motor behaviors as sorting are prestages to the classifying functions of the mind.

There is an urgent need for further development studies, especially studies that use the longitudinal method.

### **Language Arts, Fine Arts, Natural Sciences, and Mathematics**

Most investigations in this field were concerned with the teaching of mathematics.

Magne (14, 15) tried to discover whether solving fractions by placing the quotient over the dividend was more effective than the Swedish method of placing quotients under divisors. Results seem to show the former method to be superior to the latter. It was impossible to determine whether this was due to the superiority of the method or to teacher enthusiasm for the new method.

In another investigation (17) Magne examined the importance of personal activity in individualized instruction. Numerous experiments indicated that the pupils' work on their own thru personal activity was less effective than formal instruction; therefore, he recommended class instruction.

Many practical pedagogues have a notion that the teaching of difficult parts of the curriculum should be postponed until the pupils have



reached a high degree of maturity. Magne (16) was of the opinion that before such ideas are put into practice, they should be tried out with special attention to instructional methods. Long division constitutes a difficult part of the elementary teaching; therefore, he had experimental groups begin *earlier* than normal with division. One group was instructed in the conventional way, i.e., they were taught the four rules of arithmetic in order: addition, subtraction, multiplication, and division. In the other group a "circular" method was used. When comparing, it was found that the special class did as well as the regular altho it had started earlier. The conventionally instructed group was clearly inferior to the special "circularly" instructed group.

Only methods of teaching elementary mathematics have been tested. It may be advisable first to reform basic instruction since pupil attitude toward a subject is probably established very early.

In teaching reading, a synthetic method is used in Sweden while an analytic method is generally used in America. Naeslund (22) determined which is more effective. Identical twins were used as subjects, one twin being taught thru the analytic medium and the other thru the synthetic. The experiment was started before diagnosis of the twins was carried out; when this was done, it was found that 10 pairs were enzygotic. The most striking result was that the synthetic method gave better results with less intelligent pupils. For the highly intelligent, results were approximately equal. Naeslund believed that the superiority of the synthetic method derives from the fact that Swedish spelling is largely phonetic.

The superiority of the method cannot be considered absolutely proved for the following reasons: In order to keep the teacher factor constant, only two teachers were used. The same teacher instructed one twin of a pair thru the synthetic medium and the other twin thru the analytic medium. Teachers thus used two methods. They had long experience in one system but only brief training in the analytic method. It seems natural that they should teach more easily when the synthetic method was used, especially when they trained the most difficult pupils, viz., the least talented ones. It would have been better had the test been preceded by a very long period of teacher training.

### Teacher Personnel

Numerous attempts have been made to construct aptitude tests to be used in selecting students for teachers colleges; these researches have been compiled and compared by Malmquist (19). Since 1948 the selection of students has been carried out using the following tests: (a) an essay intended to indicate the applicant's personality; (b) three tests in public speaking (The applicant's aptitude as a teacher was rated during these situations by a committee of experts.); (c) free contact with a group of children; and (d) psychotechnical tests, situation tests, and tests concerning direction of interests. Every teachers college had a free choice

of what tests should be used, so various approaches to the problem have been taken. Ratings were made in different ways and the directions to the applicants were not identical. As a consequence of this, a satisfactory evaluation of the tests' prognostic value could not be made. The greatest difficulty, however, was to obtain reliable criteria indicating teaching aptitude. Therefore, Malmquist asserted that in the first place, emphasis should be put on the problem of finding acceptable criteria. These must relate to the teacher's skill in his daily work. In the second place, attempts should be made to find out what personality traits are most essential in various instructional situations and in different classes.

To improve the selection, Malmquist suggested the following tests: (a) narrative public speaking, (b) descriptive public speaking, and (c) a 20-minute interview based on a written autobiography.

These tests were to be graded uniformly with final ranking based on them and pupils' grades multiplied by the factor three. Entrance requirements would be based on this ranking. Graduates were to be followed up, and after they taught four years, teaching ability was to be rated. Teachers colleges in Sweden were to be divided into groups; in each group different personality and interest tests were to be given; however, these tests would not be used as a basis of selection. Investigation along these lines has commenced.

This proposal is probably a step forward, but its value may be relatively small. Since the relative weight of the variables constituting the basis of selection will be different at different colleges, it will be very difficult, if not impossible, to study the prognostic power of the different tests.

### Summary

Among the contributions of researchers outlined here, comparisons between the old and the new school are probably the most interesting to educators in other countries. Investigations indicate that certain goals of the new school cannot be realized. The level of knowledge, for instance, seems to decline. As yet, however, this question has not been fully elucidated.

### Bibliography

1. BJERSTEDT, ÅKE. *Interpretations of Sociometric Choice Status*. Doctor's thesis. Lund: C. W. K. Gleerup, 1956. 408 p.
2. BJÖRSJÖ, MÄRTA. *Om spatial, teknisk och praktisk begåvning*. (Regarding Spatial, Technical and Practical Talent.) Doctor's thesis. Göteborg, 1951. 270 p.
3. BLOMQUIST, JOHN. *Factors Related to Non-Promotion in the Secondary School*. Research Bulletin from the Institute of Education, University of Stockholm, No. 6. May 1956. 7 p.
4. DUREMAN, INGMAR. *Relationer mellan emotionell missanpassning och underprestation i folkskolan*. (Relationship Between Emotional Maladjustment and Underachievement in the Common School.) Meddelanden från Statens Psykologiskpedagogiska institut 1955. Stockholm, 1956. p. 10-30.

5. EDFELDT, ÅKE W. *Reading Reversal and Its Relation to Reading Readiness*. Research Bulletin from the Institute of Education, University of Stockholm, No. 1. January 1955. 8 p.
6. EDLUND, SVEN. *Undersökningar rörande Kalmarprovets prognosvärde beträffande underåriga elevers skolgagnad*: (Investigations of the Prognostic Value of Kalmar's Tests for School Readings of Pre-School Children.) Lund: C. W. K. Gleerup, 1955. 293 p.
7. EKLUND, HARALD. *Några resultat från kunskapsprov i engelska, givna åt intelligensekvivalerade grupper i folkskola och läroverk*. (Some Results from Achievement Tests in English Administered to Groups Homogeneous in Intelligence in the Common School and Other Institutions.) Meddelanden från Statens Psykologisk-pedagogiska institut, 1954. Stockholm, 1955. p. 44-61.
8. EKMAN, GÖSTA. "Skolformer och begåvningsfördelning." (School Organization and the Distribution of Talent.) *Pedagogisk tidskrift* 87: 15-37; May 1951.
9. ELMGREN, JOHN. *School and Psychology. A Report on the Research Work of the 1946 School Commission*. Stockholm, 1952. 342 p.
10. HENRYSSON, STEN. "School and Psychology." *Nordisk psykologi* 5: 60-63; No. 1, 1953.
11. HUSÉN, TORSTEN. *Home Background and Behavior in the Classroom Situation*. Research Bulletin from the Institute of Education, University of Stockholm, No. 5. January 1956. 7 p.
12. HUSÉN, TORSTEN, and HENRYSSON, STEN. *Factor Analysis of Achievement Tests. Methodological Considerations and Some Empirical Findings*. Research Bulletin from the Institute of Education, University of Stockholm, No. 2. April 1955. 19 p.
13. JOHANNISSON, INGVAR. *Studier av sociala relationer mellan barn i folkskoleklasser*. (Investigations of the Social Relationships Between the Children in the Common School.) Doctor's thesis. Lund: C. W. K. Gleerup, 1954. 341 p.
14. MAGNE, OLOF. "Ett experiment med två divisions-uppställningar I." (An Experiment with Two Methods of Teaching Division I.) *Folkskolan-Svensk Lärartidning*. No. 11, 1955, p. 204-10.
15. MAGNE, OLOF. "Ett experiment med två divisions-uppställningar II." (An Experiment with Two Methods of Teaching Division II.) *Folkskolan-Svensk Lärartidning*. No. 12, 1955, p. 241-49.
16. MAGNE, OLOF. "Inlärningsmetoden i division." (Methods of Instruction in Division.) *Folkskolan-Svensk Lärartidning*. No. 6, 1956. p. 104-11.
17. MAGNE, OLOF. *Några experiment rörande självverksamhet i matematik i folkskolan*. (Another Experiment Relating to Personal Activity in Mathematics in the Common School.) Meddelanden från Statens Psykologisk-pedagogiska institut, 1950. Stockholm, 1951. p. 31-55.
18. MAGNE, OLOF. *Perception and Learning*. Doctor's thesis. Göteborg: Gumperts, 1952. 228 p.
19. MALMQUIST, EVE. *Lämplighetsproven i samband med inträdesprövningar vid rikets folk- och småskoleseminarier*. (Aptitude Tests in Connection with Entrance Examinations to National Common and Elementary Teachers Colleges.) Pedagogiska skrifter, No. 218. Göteborg, 1956. 164 p.
20. MALTÉN, ARNE. *The Co-Variation Between School Success and Study Habits When Intelligence and School Attitude Are Eliminated*. Report from the Institute of Education, Uppsala University, No. 1. April 1956. 18 p.
21. MARKLUND, SIXTEN. *School Discipline in Its Relation to Educational Attitudes of Parents and Teachers*. Research Bulletin from the Institute of Education, University of Stockholm, No. 8. June 1956. 8 p.
22. NÄSLUND, JON. *Metodiken vid den första läsundervisningen*. (Methods of Teaching Beginning Reading.) Doctor's thesis. Stockholm: Svenska Bokförlaget, 1956. 187 p.
23. SANDELS, STINA. *Utvecklingspsykologiska beteendestudier hos barn i åldern 1½-8½ år*. (Developmental Psychological Studies of Behavior of the Child Between the Ages of 1½ and 8½ Years.) Doctor's thesis. Göteborg, 1956. 273 p.
24. SJÖSTRAND, WILHELM. *Skolreformen i stöpsleven*. (School Reform in the Making.) Stockholm: Natur och kultur, 1954. 175 p.

25. SKOLÖVERSTYRELSEN (ROYAL BOARD OF EDUCATION). "Redogörelse för försöksverksamhet med enhetsskolan." (Report on Experimental Effectiveness of the United School.) *Aktuellt från Skolöverstyrelsen* 6: 1-23; No. 1, 1955.
26. SKOLÖVERSTYRELSEN (ROYAL BOARD OF EDUCATION). "Redogörelse för försöksverksamhet med enhetsskolan." (Report on Experimental Effectiveness of the United School.) *Aktuellt från Skolöverstyrelsen* 7: 11-39; No. 3, 1954.
27. SKOLÖVERSTYRELSEN (ROYAL BOARD OF EDUCATION). "Redogörelse för försöksverksamhet med enhetsskolan." (Report on Experimental Effectiveness of the United School.) *Aktuellt från Skolöverstyrelsen* 8: 1-38; No. 1, 1955.
28. SKOLÖVERSTYRELSEN (ROYAL BOARD OF EDUCATION). "Redogörelse för pedagogisk försöksverksamhet: A. Enhetsskolan." (Report on Pedagogical Experimental Effectiveness: A. United School.) *Aktuellt från Skolöverstyrelsen* 5: 63-83; 1952.
29. TRANKELL, ARNE. "The Influence of the Choice of Writing Hand on the Handwriting." *British Journal of Educational Psychology*, 26, Pt. 2: 94-103; June 1956.
30. TRANKELL, ARNE. *Vänsterhänthet hos barn i skolåldern.* (Lefthandedness in the School Age Child.) Doctor's thesis. Stockholm: Forum, 1951. 300 p.

## CHAPTER VIII

### The United Kingdom

E. A. PEEL

EDUCATIONAL research in Great Britain during the period under review was largely in the fields of measurement, guidance, child development, educational psychology, group methods, and social influences upon educational processes. Attention was also paid to topics relating to teaching methods, teacher personnel, and programs for exceptional children. Less attention was given to research on administration, research methods, and curriculum altho in the case of the latter, quite a number of interesting and scholarly papers on historical aspects of the growth of curriculums and other more specialized historical and philosophical studies of education have appeared (20, 49) which could not properly be included in a review devoted to empirical research.

Since 1950, important research has been carried out on all aspects of selection for secondary education, and there has been a clearly defined rise in interest in social and group problems. Educational measurement and development continued to attract research workers. As for inquiries into teaching method, the subjects of English, French, and mathematics received most attention.

#### Administration

Material on the financial aspects of English education included the study by Peacock (129), the suggestions (10) derived from factual sources for revaluing local-authority schools, and the survey, without comments, of main building programs of local authorities in England and Wales (8, 9).

Two books on the English Educational System appeared, both of which were based largely on research material. Lowndes' book (102) was designed to give the reader insight into the basic reasons for trends in educational opinion and the essential background for this purpose. Armfelt's book (6) was addressed primarily to education students. The Ministry of Education report (112), *Early Leaving*, was devoted to a human problem of wastage in secondary schools, but many of its recommendations were made to administrators and heads of schools. Its findings were based on a competent statistical inquiry from a 10-percent sample of maintained and direct grant grammar schools in England.

#### Curriculum

Simms (166) found little grounds for satisfaction in the results of his inquiry of the school library facilities in 78 secondary modern schools.

Thirty-three schools possessed no central collection of such books, and 16 schools possessed fewer library books than pupils. The teaching of modern languages in secondary modern schools was comprehensively surveyed (15) by check sheet and questionnaire. Thirty-five schools where a modern language was taught and 128 schools where no modern language was taught were questioned. The inquiry concerned aims, choice, timetables, teachers, methods and content, effects, selection of pupils, and opinions.

Verse writing was recommended as a worthwhile addition to the curriculum by Widdows (199) and by Johnson (89, 90). The latter writer first surveyed books and opinions and then described her own experiments in lessons on verse making, comparing the writing of two groups of pupils under experimental conditions. Some form of nonimitative approach to verse writing was recommended in preference to direct imitation.

### Educational Measurement

During the period under review, much attention was given to factors of practice and coaching in intelligence tests, to the applicability of established tests like the *Terman-Merrill* and *Raven's Matrices* under special conditions and to special populations and to the construction of new tests. On the side of attainment, several new tests of grammar-school subjects appeared, and research was devoted to the problem of using children's essays as a measure of their English at age 11-plus.

Peel (131, 132, 133) showed that the mere practice achieved when one intelligence test follows one month after another can give rise on the average to a gain of five IQ points and that gain was a function of level of ability. The practice effect between second and third tests was very small—on the average about one-half IQ point. Yates (210), James (88), Dempster (46), Wiseman (204), Vernon (187), Watts, Pidgeon, and Yates (195), and Wiseman and Wrigley (207) also considered this problem along with their inquiries into the effects of coaching on intelligence. Individual findings as to the effects of coaching varied, but most investigators agreed that a gain of some nine IQ points would be made. There was less agreement as to the best way of coping with the problem in secondary selection.

Foulds and Raven (63) applied the *Progressive Matrices Tests* to a sample of some 3800 individuals of very wide age range. Retest reliabilities were high for adults, low for the under-16's. Fraser Roberts and Mallone (65) tested a sample of mental defectives, showed that *Terman-Merrill* intelligence quotients are dependent upon chronological age, and suggested a method, which was later applied by Scarr (160), of adjusting the intelligence quotients to make them independent of chronological age. Dunsdon and Fraser Roberts (48) and Fraser Roberts and Dunsdon (64) showed that 70 percent of the total information from the *Terman-Merrill* test can be obtained by using the vocabulary section only. Walton (193) investigated the interchangeability of *Terman-Merrill* and *Matrices*



test data by testing a sample of approved-school boys. Heim (76) showed that subjects tend to adapt themselves to the level of difficulty of test items.

In his monograph (186) Vernon presented a thoro account of educational and psychological test measures in terms of the theory of mental factors. Penrose (143) discussed genetic influences on the intellectual level of the population; Vernon (185) summarized studies of the mental qualities of the population; and later Burt (28) took up the allied problem of the concept of intelligence.

Research into new tests of ability included work by Bennett (12) on a group test of hearing; an examination by Jones, Hey, and Wall (91) of a group performance test; the work by Cornwell (37) on an orally presented group test of intelligence; and that by MacFarlane Smith (104) on the development of a group pencil-and-paper spatial test.

In the field of attainment tests Eppel (54) devised a new test of poetry appreciation which he claimed gave "satisfactory reliabilities." Wing (203) gave further results obtained from his tests of musical appreciation and attainment. Daniels (44) discussed ways of testing grammar-school geography at the ordinary level of the General Certificate of Education. His results seemed to vindicate the essay type of examination. Percival (144) devised reliable tests of French grammar and vocabulary for the years of the grammar school up to the General Certificate of Education ordinary level. R. A. C. Oliver (125) discussed the results of applying an experimental examination in general studies at the ordinary level of the General Certificate of Education. Studies of educational measures relevant to physical education include the papers by J. N. Oliver (121, 123) on the use of the Wetzel grid and by Duthie (50) on physical tests in the secondary school.

Several papers have been written on the reliability of the English essay examination for selecting pupils for secondary education. Finlayson (60) showed that a team of three markers marking two essays written by each pupil could produce an over-all reliability of .88. McMahon (106) and King (95) reported similar findings. Vernon and Milligan (188) investigated the reliability of essays written by students and showed that two markers of seven essays per student yielded "a reasonably reliable" measure. Penfold (141) compared the variance between examiners with that between pupils' essays and found the former to be significant and the latter not sufficiently high to render the marking free from statistical error.

### **Educational Psychology**

Several investigators looked into psychological aspects of visual education. M. D. Vernon wrote three papers (179, 180, 181) on the visual presentation of factual data and on the value of pictorial illustration for the instruction of children. She showed that the production of a con-

tinuous and coherent argument is the main factor in understanding isolated statistical data and that given this, pictorial, graphical, and numerical presentations were equally effective. She could find no marked general superiority of illustrated over nonillustrated material. Ash and Carlton (7) investigated note-taking by students during the showing of educational films. Note-taking while watching an instructional film tended to interfere with learning its contents. Nias and Kay (118) showed that presenting a 30-minute dramatized version of legal material resulted in efficient knowledge and understanding of legal points. Belson (11) showed that altho a television series on French life increased the comprehension of viewers, it also tended to make them apprehensive about language difficulties and customs.

Jones (92) found the mean nonverbal IQ of a group of bilingual Welsh pupils to be significantly higher than their verbal IQ. The difference tended to diminish as reading age in English increased. Hillman (80) photographed the eye movements of children as they were reading and suggested that a correction of the eye movements of slow readers would increase their speed of reading. Kay (93) investigated the learning and retaining of verbal material and reported that in short-term learning studies more attention should be paid to the "initial interpretation" of the learner.

Humphrey (87) examined 70 left-handed and 35 right-handed adults, using an adapted questionnaire from Hull and found that left-handers were less consistent. He suggested a threefold index for classifying handedness. Burge (24) used strength, accuracy, and speed tests of handedness on a group of 312 school pupils including right-, left-, and mixed left-right-handers and related his results to eye dominance and age. The accuracy test seemed superior for diagnostic purposes.

The problem of discipline was considered in the large monograph (78) published by the National Foundation for Educational Research in England and Wales, the result of an extensive survey in schools thruout the country. Many aspects of the problem were dealt with, including the teacher's most acute and persistent difficulties, the characteristics of difficult pupils, and the importance of understanding the pupil's attitude toward school. The majority of teachers opposed the prohibition of all corporal punishment. Burt and Howard (30) factor-analyzed the conditions and qualities of 273 maladjusted children to investigate the nature of maladjustment. They obtained a bipolar grouping into environmental and personal conditions and a further division into intellectual and emotional factors. Birch (14) surveyed a large industrial area for the incidence of nail-biting.

### **Educational Sociology**

Research in this field included several investigations into group structure and education, a number of inquiries on the effects of outside in-

fluences on school progress and general attainment, and various papers on educational aspects of social psychology.

Richardson and others (156) demonstrated the value of friendship groups for the teaching of English. Children in such groups revealed a better attitude even to the formal aspects of English grammar than a number of control children. In a further contribution Richardson (155) applied group technics to speech problems. Higginbotham carried out experiments in leaderless discussion by groups of sixth-formers and approved-school girls (156). Shukla made a study of school friendships by using a questionnaire embodying a simple sociometric test (156). Hallworth (72) demonstrated the existence of relatively stable groups within each form, each of which possessed its own value system which tended to be centered on "over-chosen" individuals. The Bristol Institute of Education published a collection of researches (96) on the formation of spontaneous youth groups; Davey (45) studied factors making for social harmony in the classroom; and Shaw (164) in a study of popular and unpopular children brought out the complexity of the forces that cause class group structure. Oppenheim (126) showed that popularity and friendship groupings among grammar-school boys are not so bound up with socioeconomic status as is the case in American schools. Smith, Sluckin, and Graham (167) made up groups of primary-school girls of various combinations of ability and assertiveness; set the groups on brick building projects; and assessed them for friendliness, cooperation, quality of work, and quantity of material used. Murray (114) showed that E. S. N. children formed friendships which were more stable than usually believed and discussed the implications of his findings for the organized group activity of the children.

Lowe (101) demonstrated a tentative predictable relationship between a child's social background and success in school, and Campbell (31) showed that home background exercises a clear-cut influence upon the progress of pupils in secondary schools. The Scottish inquiry (162) into the social implications of the 1947 Scottish Mental Survey showed how intelligence and attitude toward education varied with occupational class and social background. High IQ's tended to be more widely distributed across the whole range of occupational class, whereas low IQ's were more limited to the lower economic levels. McLaren showed that the initially better readers came from homes of higher socioeconomic status and that school experience between five and eight years does not reduce differences between children from different socioeconomic levels (163). By surveying the parent and home ratings of grammar-school pupils, Halsey and Gardner (73) found that a middle-class boy had a greater chance of entering a grammar school than the son of working-class parents. Glass (67) related social mobility to educational factors. Blyth (17) inquired into the relation between habitat and outlook of children in rural, small town, urban, and other areas. Restricted habitats tended to dominate the children's outlook. Patterson (128) showed that migrancy of pupils, largely

owing to the casual nature of farm labor, is a more serious problem in the rural schools.

Forrester assessed the attitude of adolescents toward security, adventure, development, rights, and responsibilities in the physical, mental, social, and other spheres (156). Himmelweit, Halsey, and Oppenheim (81) found that adolescents revealed a real sense of social class and underestimated their fathers' occupations according to their own aspirations. Phillips (145) obtained opinions from secondary modern school girls of what made for happiness-unhappiness in the home and other aspects of family life. Shared pleasurable experience with parents was voted most desirable. Wilson (202) showed that the vocational preferences of secondary modern school children were made with regard for personal limitations, district needs, and opportunity. Pringle (148, 149) gave Doll's *Vineland Social Maturity Scale* to a sample of English children and pointed to the need for a British standardization. She discussed, also, the value of the concept of social backwardness and its reduction by training.

### Guidance and Counseling

Research under this heading fell mainly into the groups of (a) the predictive power of age 11-plus selection technics, (b) the problem of borderline cases and misfits, and (c) the selection of undergraduate and student teachers (dealt with later under Teacher Personnel).

The combined and relative predictive power of objective tests of intelligence and arithmetic were investigated by Rutter (158), Peel and Rutter (140), Emmett and Wilmut (53), Richardson (157), and Sutherland (173). Where intelligence tests were compared with other tests, all workers reported the clear superiority of a verbal intelligence test as the best *single* predictor.

The predictive value of new type objective tests was compared with that of school examinations and old type examinations in English and arithmetic. Emmett (52) reported that the school examinations were slightly superior. Nisbet (119) reported that English composition added slightly to the predictive power of a team of objective tests, and Sutherland (174) reported that tests of problem arithmetic were superior to an objective test of arithmetic. Peel and Armstrong (137) and Wiseman (205) produced convincing evidence of the predictive value of English composition in secondary selection.

Bosomworth (18, 19) showed that primary-school teachers' estimates of school attainment adjusted for interschool differences can be the most predictive part of the selection procedure.

The role of tests of interest in connection with choosing a grammar or a technical secondary education was examined by Peel (136), Watts and Slater (196), Fitzpatrick and Wiseman (62), Wiseman (206), and Wrigley (208). All confirmed the value of interest tests in which the fields of practical and academic interests were utilized.

Turning to the assessment of personality, Walker's survey (192) of the use of school records showed that they had only limited value as a record of the whole class but could be used with advantage to record those things about the pupils that appear significant to the teacher. P. E. Vernon (183) was concerned only incidentally with education, but one of his conclusions was that personality ratings seldom contribute more to selection than school marks.

Borderline problems at the age 11-plus examination, misfits and failures in secondary-school progress, and premature school leaving have also been the subjects of research study. Pilliner (146) related the position and size of the borderline group to test standards and test reliabilities; Hewitt (77) inquired into the grammar-school performance of 11-plus failures who were subsequently admitted to grammar schools. Wrigley also commented on this problem (209). Parnell and others (127) investigated successful entrants to grammar schools and suggested that too many ectomorphs tended to be admitted. The causes of premature leaving were investigated by Collins (36) and in the Ministry of Education pamphlet (112).

Guidance from the upper forms of grammar schools to universities and colleges was investigated by Williams (201). Dale (41, 42, 43) studied the prognostic value of university entrance examinations and the role of psychological tests in university selection. The effect upon undergraduate performance of doing military service before going up to university was studied by Brown and M'Comisky (22). Himmelweit and Summerfield (82) gave cognitive and noncognitive tests to 232 university students taking economics and commerce final degrees and found a usefully predictive correlation. They also analyzed the backgrounds of overachievers and underachievers.

### **Mental and Physical Development**

Research into the topic of development fell into the four main groups of intellectual development, development in school attainment, development of interests and attitudes out of school, and physical development.

Anstey and others (5) tested a group of 500 army recruits and showed clear-cut differences in test performances between groups with different educational backgrounds. Stewart and Jones (170) showed that the verbal ability of a bilingual pupil is affected by "reading" experience, and Watts (197) found evidence that university training in mathematics raised intelligence scores. Lovell (100) discovered a mental factor, the ability to "categorize," and linked its presence or absence with mental stimulation or nonstimulation in young adults.

Peel and Graham (138, 139) and Graham (68) took up the question of differentiation of mental ability with age over the age range of 9 to 11 years. They found no evidence of differentiation and a little evidence of integration, and they suggested that statistical factors might have in-

fluenced their results. Dunsdon and Fraser Roberts (48) tested a large sample of 5- to 15-year-olds with four vocabulary tests and found consistent and significant sex differences in favor of boys. Carpenter (32) and Lunzer (103) carried out adaptations of Piaget's experiments on concept formation and commented on Piaget's sequence in terms of the mental ages of the children tested and other factors.

Fitzpatrick (61) suggested that the IQ's of feeble-minded adults tend to be higher than usually assumed and suggested reasons for this discrepancy. Reed (153) carried out a small survey of the incidence of auditory high-frequency weakness among school children.

Research into development in school attainment included carefully designed study (111) of reading ability. Reading backwardness in primary and secondary modern schools was discovered to be greater than before the war. Curr and Evans (39) produced evidence that activity methods lead to slightly improved arithmetic and English attainments in a primary school. Croft (38) surveyed backward pupils in a secondary modern school. Hughes (85) investigated primary-school children's choices of activities and related them to educational organization; and Kemp (94) found that the main environmental and "outside" factors determining attainments in primary schools were intelligence level, socioeconomic status, large school enrolment, and good morale. Schonfield (161) demonstrated that special difficulties are met by retarded readers at an RA of 8-plus. M. D. Vernon (178) surveyed research bearing on the improvement of reading, and P. E. Vernon and others (189) compared the basic attainments of Scottish and English children at the ages of 8, 11, and 11-plus and found Scottish children to be markedly advanced in formal subjects at eight, but less so later. Nayar (115, 116) analyzed the spelling difficulties of secondary modern school pupils and compared groups of English and Indian children.

With regard to outside school interests, attitudes, and preferences of pupils, Pennington (142) studied the active, passive, and intellectual leisure-time interests of secondary-school pupils, using forced choice vocabulary tests; Stewart (169) used questionnaires for a similar purpose. Wall and Simson (190, 191) investigated the effects of films upon adolescents; Williams (200) compared the magazine reading of grammar and secondary modern children; and McKellar and Harris (105) used group discussion, interview, and questionnaire methods for investigating the radio preferences of children. Burns (26) showed how prevalent newspaper reading is among secondary modern school children and McNeille (107) revealed that televising was extensive among grammar-school girls, but less so in the upper forms. Whitehead (198) investigated the attitude of grammar-school pupils toward 12 novels read in school.

Research into physical development included the study of Oliver and Chesworth (124) of the physical characteristics of educationally subnormal boys, the investigation by Steel (168) on the effect of mental practice on the acquisition of a motor skill, and the studies by Adamson



(1, 2, 3) on the effect of overload on the physical fitness of boys and of developmental training on physical fitness. Highmore and Taylor (79) analyzed the athletic ability of a sample of 11-year-olds into a general factor and three overlapping group factors of sporting events, games tests, and jumping. Bull (23) reported on physical tests at the secondary level.

### **Language Arts, Fine Arts, Natural Sciences, and Mathematics**

Research into the writing of English included the monograph (151) by Pym on the development of free writing, and the experiment by Carsley (33) for inducing older pupils in secondary modern schools to become discriminating and independent readers. The positive results of his work were shown in the quality of the book reviews written by the pupils about material they had read. Two researches concerned the appreciation and judgment of poetry. Gunn (69) factor-analyzed the ratings of a collection of poems by grammar-school pupils and undergraduates and found a general esthetic factor and a bipolar "technical" factor contrasting rhythm and rhyme with comprehension, mental imagery, and appeal. In Britton's study (21) 15 poems were selected, eight true and seven false (with nothing to communicate). They were subdivided into simple and complex poems and those revealing restrained or abandoned feeling. Boys and scientists tended to choose false poetry and undergraduates as a whole preferred simple poetry. When the test was repeated after some six months, there was an over-all improvement of judgment.

Research into the teaching of modern languages included Burns' investigation (25) into the French vocabulary of first-year forms in boys grammar schools; the greatest increase took place in the first term. Recall accounted for 60 percent, and recognition accounted for 76 percent of vocabulary encountered during the year. Halloran (70) found that a preliminary course of Esperanto helped the later learning of French by less intelligent pupils, whereas the abler pupils were better served by going straight on to French. Neale (117) inquired into the growth of reading ability in French during the grammar school, and Purvis (150) showed that first-year commercial-school pupils could profitably begin French reading halfway thru the first term.

Contributions on topics from the fine arts included the papers by Mainwaring (108) on the factors entering into the teaching of music and the summary by Peel (134) on the contributions of psychology to the teaching of art.

Chapman and Coulson (34) showed that science classes tended to be too large, that there was an excessive drift of scientists away from schools, and that the provision of laboratory assistance was unsatisfactory. Ramsay (152) related efficiency of sixth-form science teaching to equipment and other factors and also surveyed the aims of science teaching. Peel (135) discussed the bearings of psychological research upon the learning of

science. Hallworth (71) showed that group methods of learning geography produced no decrease in standard of attainment and definitely improved attitude toward geography. Long (99) investigated children's reactions to geographical pictures.

As regards mathematics, Hamza (74) drew attention to the extent of retardation in mathematics in secondary schools and noted the deficiency of retarded pupils in visual imagery. Storer (171, 172) described a survey of attainment in algebra of some 1100 boys and girls in their fourth year of grammar-school life. The errors made were analyzed and the implications discussed. Renwick (154) produced evidence relating to the teaching of algebra, and Lee (98) related factors of mental and mathematical ability to attainment in grammar-school mathematics. Meddleton (109) verified the value of systematic revision of number facts in the teaching of arithmetic, and Lee (97) described a program, based on experimental material, of diagnostic and remedial work in arithmetic. Thyne (176) reported a thoro investigation of the errors made when infant-school children carry out simple addition and subtraction number facts. Heavyside (75) examined the relationship between complexity and difficulty in arithmetic, and Sutherland (173) studied pupils' attainments in arithmetic upon entering secondary schools.

### Research Methods

There are only a few papers devoted explicitly to research methods, but new methods and designs of experiments were utilized in several of the researches so far described. Papers dealing with research include two on group research. Meiklejohn (110) described an experiment intended to give teachers an opportunity of sharing in large research projects, and Hughes (86) described a group research carried out by the students of an education department and showed how the project could be integrated with the course of teacher training.

Turning to statistical methodology, Peaker (130) described a sampling design suitable for use when a random sample of pupils is desired from schools of different sizes. Edwards (51) considered sociometric measures used in group dynamics in terms of the theory of chance and suggested modifications and a simpler method of collecting sociometric data. Vernon (182) examined the application of factorial analysis to test items, and Burt (29) described and illustrated it with an example of his method of group factor analysis. A later paper by Moursy (113) demonstrated the application of this method.

### Special Programs

Among programs for exceptional children, workers have investigated programs of remedial education and the education of E. S. N. children and of cerebral palsied children. Special programs investigated also in-

cluded the work of county colleges, education welfare departments, and the education of prisoners.

Birch (13) surveyed the reading ability of the children of an industrial community, revealing 20-percent backwardness; he made suggestions for remedial education. Valentine (177) analyzed the improvement in basic attainments and conduct following upon remedial education. Curr and Gourlay (40) eliminated practice effects and statistical regression from the "gains" made by pupils undergoing a remedial program and found that the pupils selected by tests gained more than pupils selected by teachers, but that the difference in the gains was not statistically significant.

The beginnings of a reader scheme for E. S. N. children were investigated and set out by Saban (159). J. N. Oliver (122) surveyed the physical characteristics of E. S. N. children and suggested the material and exercises for physical education suitable to their needs. Dunsdon (47) inquired into the incidence, defects, and etiology of cerebral palsied children in England and concluded with suggestions for their educational care.

Eppel and Eppel (55) first investigated the needs, interests, and attitudes of some 380 young workers attending a county college. Marked patterns of interest were found in the fields of job, leisure, and personal relationships. A scheme of education (56) was then drawn up embodying findings of the inquiry. Pitts and Simon (147) carried out a full educational and psychological survey of a group of male prisoners. Giles (66) surveyed the contribution of Education Welfare Departments to the Children's Services and drew inferences for their future development.

### Teacher Personnel

Vernon (184) found grounds for improvement in the psychological training given to students training for teachers. Hines (83) carried out experiments on activity methods in the training of teachers and obtained positive results. A comprehensive survey by Sutherland (175) showed that students admitted to train as teachers in Scotland under the postwar emergency scheme held their own with the normal students. Hitchman (84) surveyed the teaching of spoken English in primary training colleges.

The problem of assessing teaching ability was investigated by Evans (57) who found that expert opinion was the best of four not entirely satisfactory criteria. J. N. Oliver (120) found that factors associated with general teaching power, personal quality, and knowledge of subjectmatter entered into the assessments of student teachers of physical education. The attainments of students in training was the subject of inquiry by Black (16) who found evidence of considerable error in students' understanding of what they read. Cleugh (35) asked some 100 teachers who had been thru an advanced diploma course for experienced teachers for their views about written examinations in such a course. The majority (79 percent)

felt that such examinations were desirable and necessary. Evans (58, 59) investigated the attitudes toward teaching as a career of senior pupils (boys and girls) in grammar schools and students in two- and four-year courses and related the attitudes to other variables.

Selection of teachers formed the subjectmatter of papers by Burroughs (27) on the sex differences found when students are interviewed by differently constituted panels. Women students obtained higher marks for speech, enthusiasm, and suitability for teaching. Shuker (165) related training-college marks with School Certificate performance, and Warburton and Allen (194) followed up exceptional entrants to training colleges. Allen, Langan, and Warburton (4) showed that group selection procedures increased the efficiency of selection for training colleges.

### Conclusion

This review has had to be brief and hence has suffered a little in the condensing process, but it should make clear that some work has been carried out on problems relating to educational measurement, educational psychology and sociology and to the problem of guidance. Work has been carried out in other fields, but more attention should be given in the future to learning and teaching problems in the classroom relating them, perhaps, to psychological results and theory.

### Bibliography

1. ADAMSON, G. T. "The Effect of Developmental Training on Physical Fitness." *Journal of Physical Education* 45: 22-25; March 1953.
2. ADAMSON, G. T. "Effect of Systematic Overload on the Strength, Physical Fitness and Physical Efficiency of Schoolboys." *Journal of Physical Education* 44: 109-12; November 1952.
3. ADAMSON, G. T. "Some Observations on the Effects of Systematic Overloading of Physical Fitness Levels of School Boys." *Research and Studies* (Leeds University) 8: 59-65; May 1953.
4. ALLEN, M.; LANGAN, W.; and Warburton, F. W. "The Selection of Students in Training Colleges for Teachers." *Educational Review* 8: 218-23; June 1946.
5. ANSTEY, E., and others. "Differences in Intelligence and Cultural-Educational Level Between Different Educational Groups." *British Journal of Educational Psychology* 20: 99-103; June 1950.
6. ARMFELT, R. *The Structure of English Education*. London: Cohen and West, 1955. 207 p.
7. ASH, P., and CARLTON, B. J. "Value of Note-Taking During Film Learning." *British Journal of Educational Psychology* 23: 121-25; June 1953.
8. ASSOCIATION OF CHIEF EDUCATION OFFICERS. "Main Building Programme." An A. C. E. O. Survey I. *Education* 108: 231-33; August 1956.
9. ASSOCIATION OF CHIEF EDUCATION OFFICERS. "Main Building Programmes." An A. C. E. O. Survey II. *Education* 108: 250-52; August 1956.
10. ASSOCIATION OF MUNICIPAL CORPORATIONS, C. C. A., U. D. C. A., R. D. C. A., and A. E. C. *The Revaluation of Local Authority Schools*. London: the Association, 1955. 32 p.
11. BELSON, W. A. "Learning and Attitude Changes Resulting from Viewing a Television Series 'Bon Voyage.'" *British Journal of Educational Psychology* 26: 31-38; February 1956.

12. BENNETT, S. M. "A Group Test of Hearing for Six Year Old Children." *British Journal of Educational Psychology* 21: 45-52; February 1951.
13. BIRCH, L. B. "The Improvement of Reading Ability." *British Journal of Educational Psychology* 20: 73-76; June 1950.
14. BIRCH, L. B. "The Incidence of Nail Biting among School Children." *British Journal of Educational Psychology* 25: 123-28; June 1955.
15. BIRMINGHAM UNIVERSITY INSTITUTE OF EDUCATION, BOARD OF STUDIES FOR FOREIGN LANGUAGES. "A Survey of Some Aspects of Modern Language Teaching in Certain Secondary Modern Schools." *Educational Review* 53: 194-216; June 1953.
16. BLACK, E. L. "The Difficulties of Training College Students in Understanding What They Read." *British Journal of Educational Psychology* 24: 17-31; February 1954.
17. BLYTH, W. A. L. "An Exploratory Inquiry into the Relation Between Habitat and Outlook among Children Aged Ten to Eleven." *Researches and Studies* (Leeds University) 9: 46-52; January 1954.
18. BOSOMWORTH, G. "Allocating Children to Secondary Schools." *Educational Review* 3: 178-82; June 1951.
19. BOSOMWORTH, G. "The Use of Teacher's Estimates in Allocating Children to Secondary Schools." *Research Review* (Durham University) 4: 50-53; September 1953.
20. *British Journal of Educational Studies*. Volumes 1, 2, 3, 4: November 1952-May 1956.
21. BRITTON, J. N. "Evidence of Improvement in Poetic Judgment." *British Journal of Psychology* 45: 196-208; August 1954.
22. BROWN, E. M., and M'COMISKY, J. G. "Ex-National Service and 'Schoolboy' Undergraduates: A Comparative Study of Academic Performance." *British Journal of Educational Psychology* 25: 55-59; February 1955.
23. BULL, K. R. "Physical Tests in Secondary School." *Physical Education* 47: 83-87; November 1955.
24. BURGE, I. C. "Some Aspects of Handedness in Primary School Children." *British Journal of Educational Psychology* 22: 45-51; February 1952.
25. BURNS, D. G. "An Investigation into the Extent of First-Year Vocabulary in French in Boys' Grammar Schools." *British Journal of Educational Psychology* 21: 36-44; February 1951.
26. BURNS, D. G. "Newspaper Reading in the Secondary Modern School." *British Journal of Educational Psychology* 25: 1-9; February 1955.
27. BURROUGHS, G. E. R. "Sex Differences in Two Interviews." *Educational Review* 4: 51-54; November 1951.
28. BURT, C. "The Evidence for the Concept of Intelligence." *British Journal of Educational Psychology* 25: 158-77; November 1955.
29. BURT, C. "Group Factor Analysis." *British Journal of Psychology (Statistical Section)* 3: 40-75; March 1950.
30. BURT, C., and HOWARD, M. "Nature and Causes of Maladjustment among Children of School Age." *British Journal of Psychology (Statistical Section)* 5: 39-59; March 1952.
31. CAMPBELL, W. J. "The Influence of Home Environment on the Educational Progress of Selective Secondary School Children." *British Journal of Educational Psychology* 22: 89-100; June 1952.
32. CARPENTER, T. E. "A Pilot Study for a Quantitative Investigation of Jean Piaget's Original Work on Concept Formation." *Educational Review* 7: 142-49; February 1955.
33. CARSLY, J. D. "The Guidance of Extensive Reading at the Top of the Secondary Modern School." *Educational Review* 7: 185-98; June 1955.
34. CHAPMAN, K. M. H., and COULSON, E. H. "An Inquiry into the Conditions Affecting Science Teaching in Grammar Schools." *School Science Review* 35: 168-77; March 1954.
35. CLEUGH, M. F. "The Reaction of Adult Students to a Written Examination." *British Journal of Educational Psychology* 26: 51-65; February 1956.
36. COLLINS, M. "Causes of Premature Leaving from Grammar Schools." *British Journal of Educational Psychology* 24: 129-42; November 1954. 25: 23-35; February 1955.

37. CORNWELL, J. "An Orally Presented Group Test of Intelligence for Juniors." *Educational Review* 3: 212-21; June 1951.
38. CROFT, J. "A Teacher's Survey of His Backward Class in a Secondary Modern School." *British Journal of Educational Psychology* 21: 135-44; June 1951.
39. CURR, W., and EVANS, E. "Intelligence and Attainment in an Activity School." *Educational Review* 2: 215-21; June 1950.
40. CURR, W., and COURLAY, N. "An Experimental Evaluation of Remedial Education." *British Journal of Educational Psychology* 23: 45-49; February 1953.
41. DALE, R. R. "Psychological Tests in University Selection." *Educational Review* 4: 40-50; November 1951.
42. DALE, R. R. *From School to University*. London: Routledge and Kegan Paul, 1955. 258 p.
43. DALE, R. R. "The Prognostic Value of the University Entrance Examination." *British Journal of Educational Psychology* 22: 124-39; June 1952.
44. DANIELS, J. C. "Testing Geography at the Ordinary Level of the General Certificate of Education." *British Journal of Educational Psychology* 24: 180-89; November 1954.
45. DAVEY, A. G. "Social Harmony in the Classroom." *Educational Papers*, No. 45.
46. DEMPSTER, J. J. B. "Symposium on the Effects of Coaching and Practice in Intelligence Tests." *British Journal of Educational Psychology* 24: 1-8; February 1954.
47. DUNSDON, M. I. *The Educability of Cerebral Palsied Children*. National Foundation for Educational Research in England and Wales, Publication No. 4. London: Newnes, 1951. 163 p.
48. DUNSDON, M. I., and FRASER ROBERTS, J. A. "Performance of 2,000 Children in Four Vocabulary Tests." *British Journal of Psychology (Statistical Section)* 8: 3-15; May 1955.
49. DURHAM UNIVERSITY. *Research Review*, Vols. 1-7, 1950-1956.
50. DUTHIE, J. H. "The Measurement of Dynamic Strength." *Journal of Physical Education* 46: 41-44; July 1954.
51. EDWARDS, D. S. "The Constant Frame of Reference Problem in Sociometry." *Sociometry* 11: 372-79; November 1948.
52. EMMETT, W. G. "Secondary Modern and Grammar School Performance Predicted by Tests Given in Primary Schools." *British Journal of Educational Psychology* 24: 91-98; June 1954.
53. EMMETT, W. G., and WILMUT, F. S. "The Prediction of School Certificate Performance in Specific Subjects." *British Journal of Educational Psychology* 22: 52-62; February 1952.
54. EPEL, E. M. "A New Test of Poetry Appreciation." *British Journal of Educational Psychology* 20: 111-16; June 1950.
55. EPEL, E. M., and EPEL, M. "Young Workers at a County College." *British Journal of Educational Psychology* 23: 29-44; February 1953.
56. EPEL, E. M., and EPEL, M. "Young Workers at a County College Part II." *British Journal of Educational Psychology* 23: 87-96; June 1953.
57. EVANS, K. M. "A Critical Survey of Methods of Assessing Teaching Ability." *British Journal of Educational Psychology* 21: 89-95; June 1951.
58. EVANS, K. M. "A Further Study of Attitudes Towards Teaching as a Career." *British Journal of Educational Psychology* 23: 58-63; February 1953.
59. EVANS, K. M. "A Study of Attitudes Towards Teaching as a Career." *British Journal of Educational Psychology* 22: 63-69; February 1952.
60. FINLAYSON, D. S. "The Reliability of Marking Essays." *British Journal of Educational Psychology* 21: 126-34; June 1951.
61. FITZPATRICK, F. K. "An Investigation Bearing on the Laws Relating to Feeble-mindedness and Their Application." *British Journal of Educational Psychology* 25: 117-22; June 1955.
62. FITZPATRICK, T. F., and WISEMAN, S. "An Interest Test for Use in Selection for Technical Education." *British Journal of Educational Psychology* 24: 99-105; June 1954.
63. FOULDS, G. A., and RAVEN, J. C. "An Experimental Survey with Progressive Matrices." *British Journal of Educational Psychology* 20: 104-10; June 1950.
64. FRASER ROBERTS, J. A., and DUNSDON, M. I. "Relation of T-M Vocabulary Test to M. A. in a Sample of English Children." *British Journal of Psychology (Statistical Section)* 6: 61-70; November 1953.



65. FRASER ROBERTS, J. A., and MALLONE, M. A. "On the Adjustment of Terman-Merrill M. A. I. Q.'s to Secure Comparability at Different Ages." *British Journal of Psychology (Statistical Section)* 5: 65-79; June 1952.
66. GILES, G. A. "Education Welfare Departments." *Educational Review* 5: 98-109; February 1953.
67. GLASS, D. V. *Social Mobility in Britain*. London: Routledge and Kegan Paul, 1954. 412 p.
68. GRAHAM, D. "Differentiation of Ability in Primary School Children." *Research Review* (Durham University) 4: 27-29; September 1953.
69. GUNN, D. C. "Factors in the Appreciation of Poetry." *British Journal of Educational Psychology* 21: 96-104; June 1951.
70. HALLORAN, J. H. "A Four Year Experiment in Esperanto as an Introduction to French." *British Journal of Educational Psychology* 22: 200-204; November 1952.
71. HALLWORTH, H. J. "Group Work in the Teaching of Geography." *Educational Review* 7: 124-33; February 1955.
72. HALLWORTH, H. J. "Sociometric Relationships among Grammar School Boys and Girls Between the Ages of 11 and 16 Years." *Sociometry* 16: 39-70; February 1953.
73. HALSEY, A. H., and GARDNER, L. "Selection of Secondary Education and Achievement in Four Grammar Schools." *British Journal of Sociology* 4: 60-77; March 1953.
74. HAMZA, M. "Retardation in Mathematics Amongst Grammar School Pupils." *British Journal of Educational Psychology* 22: 189-95; November 1952.
75. HEAVYSIDE, M. J. "The Relation of Complexity to Difficulty in School Arithmetic." *Researches and Studies* (Leeds University) 10: 59-83; May 1954.
76. HEIM, A. W. "Adaptation to Level of Difficulty in Intelligence Testing." *British Journal of Psychology* 46: 211-24; August 1955.
77. HEWITT, A. "11 Plus Rejects Who Were Subsequently Admitted to a Grammar School." *Research Review* (Durham University) 6: 11-17; September 1955.
78. HIGHFIELD, M. E., and PINSENT, A. *A Survey of Rewards and Punishments in Schools*. London: National Foundation for Educational Research in England and Wales, 1952. 432 p.
79. HIGHMORE, G., and TAYLOR, W. R. "A Factorial Analysis of Athletic Ability." *British Journal of Statistical Psychology* 7: 1-8; May 1954.
80. HILLMAN, H. H. "Photographic Study of Children's Eye Movements During Reading." *Research Review* (Durham University) 6: 27-39; September 1955.
81. HIMMELWEIT, H. T.; HALSEY, A. H.; and OPPENHEIM, A. N. "The Views of Adolescents on Some Aspects of the Social Class Structure." *British Journal of Sociology* 3: 148-72; January 1952.
82. HIMMELWEIT, H. T., and SUMMERFIELD, A. "Student Selection: An Experimental Investigation." Parts II and III. *British Journal of Sociology* 2: 59-75, November 1950; 340-351, March 1951.
83. HINES, H. J. "An Experiment in Activity Methods Applied to the Work of a Training College." *Educational Review* 2: 101-109; February 1950.
84. HITCHMAN, P. J. "The Teaching of Spoken English in Training Colleges." *Educational Review* 8: 47-63; November 1955.
85. HUGHES, E. W. "Children's Choices in Individual Activities in the Junior School." *British Journal of Educational Psychology* 25: 36-50; February 1955.
86. HUGHES, E. W. "Group Research with Post Graduate Labor in a Department of Education." *British Journal of Educational Psychology* 25: 99-106; June 1955.
87. HUMPHREY, M. E. "Consistency of Hand Usage." *British Journal of Educational Psychology* 21: 214-25; November 1951.
88. JAMES, W. S. "Symposium on the Effects of Coaching and Practice in Intelligence Tests." *British Journal of Educational Psychology* 23: 155-62; November 1953.
89. JOHNSON, MARGARET E. B. "Children's Verse Writing in Schools." *Educational Review* 5: 37-52; November 1952.
90. JOHNSON, MARGARET E. B. "Children's Verse Writing in Schools, Part II." *Educational Review* 5: 110-27; February 1953.
91. JONES, T.; HEY, C. G.; and WALL, W. D. "A Group Performance Test and Scale of Intelligence." *British Journal of Educational Psychology* 22: 160-72; November 1952.

92. JONES, W. R. "The Language Handicap of Welsh Speaking Children." *British Journal of Educational Psychology* 22: 114-23; June 1952.
93. KAY, H. "Learning and Retaining Verbal Material." *British Journal of Psychology* 46: 81-100; May 1955.
94. KEMP, L. C. D. "Environmental and Other Characteristics Determining Attainment in Primary Schools." *British Journal of Educational Psychology* 25: 67-77; June 1955.
95. KING, W. H. "A Note on the Marking of Essays." *Educational Review* 8: 39-46; November 1955.
96. KUENSTLER, P. H. K. *Spontaneous Youth Groups*. Publication No. 8. Bristol, England: Institute of Education, 1955. 76 p.
97. LEE, D. M. "Diagnostic and Remedial Work in Arithmetic." *Maths Gazette* 39: 265-77; December 1955.
98. LEE, D. M. "A Study of Specific Ability and Attainment in Mathematics." *British Journal of Educational Psychology* 25: 178-89; November 1955.
99. LONG, M. "Children's Reactions to Geographical Pictures." *Geography* 38: 100-107; April 1953.
100. LOVELL, K. "A Study of the Problem of Intellectual Deterioration in Adolescents and Young Adults." *British Journal of Psychology* 46: 199-210; August 1955.
101. LOWE, N. "The Relationship Between Success in School Work and Socio-Economic Background." *Educational Review* 2: 207-14; June 1950.
102. LOWNDES, G. A. N. *The British Educational System*. London: Hutchinson, 1955. 155 p.
103. LUNZER, E. A. "A Pilot Study for a Quantitative Investigation of Jean Piaget's Original Work on Concept Formation." *Educational Review* 8: 193-200; June 1956.
104. MACFARLANE SMITH, I. "Development of a Spatial Test." *Research Review* (Durham University) 5: 19-33; September 1954.
105. McKELLAR, P., and HARRIS, R. "Radio Preferences of Adolescents and Children." *British Journal of Educational Psychology* 22: 101-13; June 1952.
106. McMAHON, D. "Educational Selection and Allocation." *Current Trends in British Psychology*. London: Methuen, 1953. Chapter 5, p. 45-58.
107. McNEILLE, F. M. "The Use of Television by Grammar School Pupils." *Educational Review* 8: 64-68; November 1955.
108. MAINWARING, J. "Psychological Factors in the Teaching of Music." *British Journal of Educational Psychology* 21: 105-21, June; 199-213 November 1951.
109. MEDDLETON, I. G. "An Experimental Investigation into the Systematic Teaching of Number Combinations in Arithmetic." *British Journal of Educational Psychology* 26: 117-27; June 1956.
110. MEIKLEJOHN, J. "The Local Education Authority and Educational Research." *British Journal of Educational Psychology* 22: 140-46; June 1952.
111. MINISTRY OF EDUCATION. *Reading Ability*. Pamphlet 18. London: Her Majesty's Stationery Office, 1950. 51 p.
112. MINISTRY OF EDUCATION. *Early Leaving*. London: Her Majesty's Stationery Office, 1954. 99 p.
113. MOURSY, E. M. "The Hierarchical Organization of Cognitive Levels." *British Journal of Psychology (Statistical Section)* 5: 151-80; November 1952.
114. MURRAY, H. "The Sociometric Stability of Personal Relations among Retarded Children." *Sociometry* 16: 113-41; May 1953.
115. NAYAR, N. S. "A Comparative Study of the Spelling Disabilities of English and Indian Children." *Educational Review* 8: 201-207; June 1956.
116. NAYAR, N. S. "A Comparative Study of the Spelling Disabilities of the Entrants and Leavers of a Secondary Modern School." *Educational Review* 7: 134-41; February 1955.
117. NEALE, L. W. "Reading Ability in French." *Research Review* (Durham University) 4: 9-14; 1953.
118. NIAS, A. H. W., and KAY, H. "Immediate Memory of a Broadcast Feature Programme." *British Journal of Educational Psychology* 25: 154-60; November 1954.
119. NISBET, J. D. "English Composition in Secondary School Selection." *British Journal of Educational Psychology* 25: 51-54; February 1955.

120. OLIVER, J. N. "An Analysis of the Various Factors Associated with the Assessment of Teaching Ability in Physical Education." *British Journal of Educational Psychology* 26: 66-77; February 1956.
121. OLIVER, J. N. "A Method of Assessing Physical Growth in Children." *Journal of Physical Education* 44: 66-73; July 1952.
122. OLIVER, J. N. "Physical Education for E. S. N. Children." *Educational Review* 6: 122-36; February 1956.
123. OLIVER, J. N. "Physical Growth and the Measurement of Height and Weight in Schools." *Journal of Physical Education* 44: 25-30; March 1952.
124. OLIVER, J. N., and CHESWORTH, A. "The Physical Characteristics of Educationally Subnormal Boys." *Special Schools Journal* 45: 29-32; June 1956.
125. OLIVER, R. A. C. *An Experimental Examination in General Studies*. Manchester: Joint Matriculation Board, 1955. 36 p.
126. OPPENHEIM, A. N. "Social Status and Clique Formation among Grammar School Boys." *British Journal of Sociology* 6: 228-45; September 1955.
127. PARNELL, R. W., and OTHERS. "Physique and the Grammar School Entrance Examination." *British Medical Journal* 1: 1506-10; June 1955.
128. PATTERSON, A. C. "The Effects of Pupil-Migrancy on Ability and Achievement in Rural and Burgh Schools." *British Journal of Educational Psychology* 20: 186-91; November 1950.
129. PEACOCK, A. T. "The Finance of State Education in the United Kingdom." *Yearbook of Education*. London: Evans, 1956. p. 305-20.
130. PEAKER, G. F. "A Sampling Design Used by the Ministry of Education." *Journal of the Royal Statistical Society* (Ser. A) 116: 140-59; 1953.
131. PEEL, E. A. "Footnote on Practice Effects Between Three Consecutive Tests of Intelligence." *British Journal of Educational Psychology* 23: 126; June 1953.
132. PEEL, E. A. "A Note on Practice Effects in Intelligence Tests." *British Journal of Educational Psychology* 21: 122-25; June 1951.
133. PEEL, E. A. "Practice Effects Between Three Consecutive Tests of Intelligence." *British Journal of Educational Psychology* 22: 196-200; November 1952.
134. PEEL, E. A. "Psychology and the Teaching of Art." *British Journal of Educational Psychology* 24: 143-53; November 1954.
135. PEEL, E. A. "Psychology and the Teaching of Science." *British Journal of Educational Psychology* 24: 135-44; November 1955.
136. PEEL, E. A. "Selection for Technical Education." *Educational Review* 4: 183-95; June 1952.
137. PEEL, E. A., and ARMSTRONG, H. G. "The Predictive Power of the English Composition in the 11 Plus Examination." *British Journal of Educational Psychology* 26: 163-71; November 1956.
138. PEEL, E. A., and GRAHAM, D. "Differentiation of Ability in Primary School Children." *Research Review* (Durham University) 2: 40-48; September 1951.
139. PEEL, E. A., and GRAHAM, D. "Differentiation of Ability in Primary School Children." *Research Review* (Durham University) 3: 31-34; September 1952.
140. PEEL, E. A., and RUTTER, D. "The Predictive Value of the Entrance Examination as Judged by the School Certificate Examination." *British Journal of Educational Psychology* 21: 30-35; February 1951.
141. PENFOLD, D. M. E. "Essay Marking Experiments: Shorter and Longer Essays." *British Journal of Educational Psychology* 26: 128-36; June 1956.
142. PENNINGTON, A. "Leisure Interests in School Boys." *Research Review* (Durham University) 1: 31-37; July 1950.
143. PENROSE, L. S. "Genetic Influences on the Intellectual Level of Population." *British Journal of Psychology* 40: 128-36; May 1950.
144. PERCIVAL, T. S. "Achievement in French." *Research Review* (Durham University) 1: 38-47; July 1950.
145. PHILLIPS, D. J. "Study of the Concepts of Family Life Held by a Group of Adolescent Girls." *Researches and Studies* (Leeds University) 10: 14-18; May 1954.
146. PILLINER, A. E. G. "The Position and Size of the Border-Line Group in an Examination." *British Journal of Educational Psychology* 20: 133-36; June 1950.
147. PITTS, R., and SIMON, A. "Psychological and Educational Study of a Group of Male Prisoners." *British Journal of Educational Psychology* 24: 106-19; June 1954.

148. PRINGLE, M. L. K. "Social Maturity and Social Competence." *Educational Review* 3: 113-28; February 1951.
149. PRINGLE, M. L. K. "Social Maturity and Social Competence." *Educational Review* 3: 183-95; June 1951.
150. PURVIS, H. "Teaching of French in Secondary Modern Schools." *Research Review* (Durham University) 4: 15-22; September 1953.
151. PYM, D. *Free Writing*. Bristol Institute of Education Publication No. 10. London: University of London Press, 1956. 148 p.
152. RAMSAY, M. P. "A Note on the Conditions Affecting Science Teaching in Grammar Schools." *School Science Review* 35: 313-16; June 1954.
153. REED, G. F. "Auditory High Frequency Weakness in School Children." *Research Review* (Durham University) 4: 23-26; September 1953.
154. RENWICK, F. M. "The Approach to Algebra." *Maths Gazette* 37: 111-16; May 1953.
155. RICHARDSON, J. E. "Group Techniques Applied to Speech Problems." *New Era* 34: 1-5; January 1953.
156. RICHARDSON, J. E., and OTHERS. *Studies in the Social Psychology of Adolescence*. London: Routledge and Kegan Paul, 1951. 266 p.
157. RICHARDSON, S. C. "Some Evidence Relating to the Validity of Selection for Grammar Schools." *British Journal of Educational Psychology* 26: 15-24; February 1956.
158. RUTTER, D. "Inquiry: Predictive Value of Grammar School Essay Examination." *Research Review* (Durham University) 1: 3-11; July 1950.
159. SABAN, A. "The Beginning Stages of a Reading Scheme for E. S. N. Children." *Educational Review* 8: 185-92; June 1956.
160. SCARR, E. H. "Changes in Terman Merrill I. Q. with Dull Children." *British Journal of Psychology (Statistical Section)* 61: 71-76; November 1953.
161. SCHONFIELD, D. "Special Difficulties at a Reading Age of Eight Plus." *British Journal of Educational Psychology* 26: 39-50; February 1956.
162. SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION. *Social Implications of the 1947 Scottish Mental Survey*. London: University of London Press, 1953. 356 p.
163. SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION. *Studies in Reading II*. London: University of London Press, 1950.
164. SHAW, H. "A Study of Popular and Unpopular Children." *Educational Review* 6: 208-20; June 1954.
165. SHUKER, E. E. "Entry to Training Colleges." *Educational Review* 5: 66-69; November 1952.
166. SIMMS, T. H. "Secondary Modern School Library." *Research Review* (Durham University) 1: 12-21; July 1950.
167. SMITH, F. V.; SLUCKIN, W.; and GRAHAM, D. "The Efficiency of Differently Constituted Groups of Children in Different Types of Tasks." *British Journal of Psychology* 44: 339-46; November 1953.
168. STEEL, W. L. "The Effect of Mental Practice in the Acquisition of a Motor Skill." *Journal of Physical Education* 44: 101-104; November 1952.
169. STEWART, M. "The Leisure Activities of Grammar School Children." *British Journal of Educational Psychology* 20: 11-34; February 1950.
170. STEWART, W. A. C., and JONES, W. R. "Bilingualism and Verbal Intelligence." *British Journal of Psychology (Statistical Section)* 4: 3-8; March 1951.
171. STORER, W. O. "An Analysis of Errors Appearing in a Test on Algebraic Fractions." *Maths Gazette* 40: 24-33; February 1956.
172. STORER, W. O. "A Study of Attainment in Algebra in Grammar Schools." *Educational Review* 6: 190-97; June 1954.
173. SUTHERLAND, J. "A Comparison of Pupils' Arithmetical Ability in the Secondary School with Their Ability at the Time of Their Transfer from Primary Schools." *British Journal of Educational Psychology* 21: 3-8; February 1951.
174. SUTHERLAND, J. "An Investigation into the Prognostic Value of Arithmetic Tests at Eleven Plus." *British Journal of Psychology (Statistical Section)* 5: 189-96; November 1952.
175. SUTHERLAND, J. "A Survey of Students Admitted to Train as Teachers in Scotland under the Post-War Emergency Scheme." *British Journal of Educational Psychology* 25: 78-91; June 1955.

176. THYNE, J. M. *Patterns of Error in the Addition Number Facts*. London: University of London Press, 1954. 207 p.
177. VALENTINE, H. B. "Some Results of Remedial Education in a Child Guidance Center." *British Journal of Educational Psychology* 21: 145-49; June 1951.
178. VERNON, M. D. "The Improvement of Reading." *British Journal of Educational Psychology* 26: 85-93; June 1956.
179. VERNON, M. D. "The Instruction of Children by Pictorial Illustration." *British Journal of Educational Psychology* 24: 171-79; November 1954.
180. VERNON, M. D. "The Value of Pictorial Illustration." *British Journal of Educational Psychology* 23: 180-87; November 1953.
181. VERNON, M. D. "Visual Presentation of Factual Data." *British Journal of Educational Psychology* 20: 194-85; November 1950.
182. VERNON, P. E. "An Application of 'Factorial Analysis' to the Study of Test Items." *British Journal of Psychology (Statistical Section)* 3: 1-15; March 1950.
183. VERNON, P. E. *Personality Tests and Assessments*. London: Methuen, 1953. 220 p.
184. VERNON, P. E. "The Post-Graduate Training of Teachers in Psychology." *British Journal of Educational Psychology* 20: 149-53; November 1950.
185. VERNON, P. E. "Psychological Studies of the Mental Quality of the Population." *British Journal of Educational Psychology* 20: 35-42; February 1950.
186. VERNON, P. E. *The Structure of Human Abilities*. London: Methuen, 1950. 160 p.
187. VERNON, P. E. "Symposium on the Effects of Coaching and Practice in Intelligence Tests." *British Journal of Educational Psychology* 24: 57-63; June 1954.
188. VERNON, P. E., and MILLIGAN, C. "Reliability of English Essays." *British Journal of Psychology (Statistical Section)* 7: 65-74; November 1954.
189. VERNON, P. E., and OTHERS. "A Comparative Study of Educational Attainments in England and Scotland." *British Journal of Educational Psychology* 25: 195-203; November 1955.
190. WALL, W. D., and SIMSON, W. A. "The Emotional Responses of Adolescent Groups to Certain Films." *British Journal of Educational Psychology* 20: 153-63; November 1950.
191. WALL, W. D., and SIMSON, W. A. "The Responses of Adolescent Groups to Certain Films." *British Journal of Educational Psychology* 21: 81-88; June 1951.
192. WALKER, A. S. *Pupils' School Records*. National Foundation for Educational Research in England and Wales, Publication No. 8. London: Newnes, 1955. 199 p.
193. WALTON, D. "The Validity and Interchangeability of Terman-Merrill and Matrices Test Data." *British Journal of Educational Psychology* 25: 190-94; November 1955. 26: 141-43; June 1956.
194. WARBURTON, F. W., and ALLEN, M. "A Follow-up of Exceptional Entrants to Training Colleges." *Education for Teaching*, February 1956. p. 12-16.
195. WATTS, A. F.; PIDGEON, D. A.; and YATES, A. *The Allocation of Primary School Leavers to Courses of Secondary Education*. Second Interim Report, National Foundation for Educational Research in England and Wales. London: Newnes, 1952. 77 p.
196. WATTS, A. F., and SLATER, P. *The Allocation of Primary School Leavers to Courses of Secondary Education*. First Interim Report, National Foundation for Educational Research in England and Wales. London: Newnes, 1950. 68 p.
197. WATTS, K. P. "The Effect of a University Training in Mathematics on the Scores in an Intelligence Test." *British Journal of Educational Psychology* 24: 32-37; February 1954.
198. WHITEHEAD, F. "The Attitudes of Grammar School Pupils Towards Some Novels Commonly Read in School." *British Journal of Educational Psychology* 26: 104-11; June 1956.
199. WIDDOWS, J. "The Poet in School." *Researches and Studies* (Leeds University) 2: 73-89; May 1950.
200. WILLIAMS, A. K. "The Magazine Reading of Secondary School Children." *British Journal of Educational Psychology* 21: 186-98; November 1951.

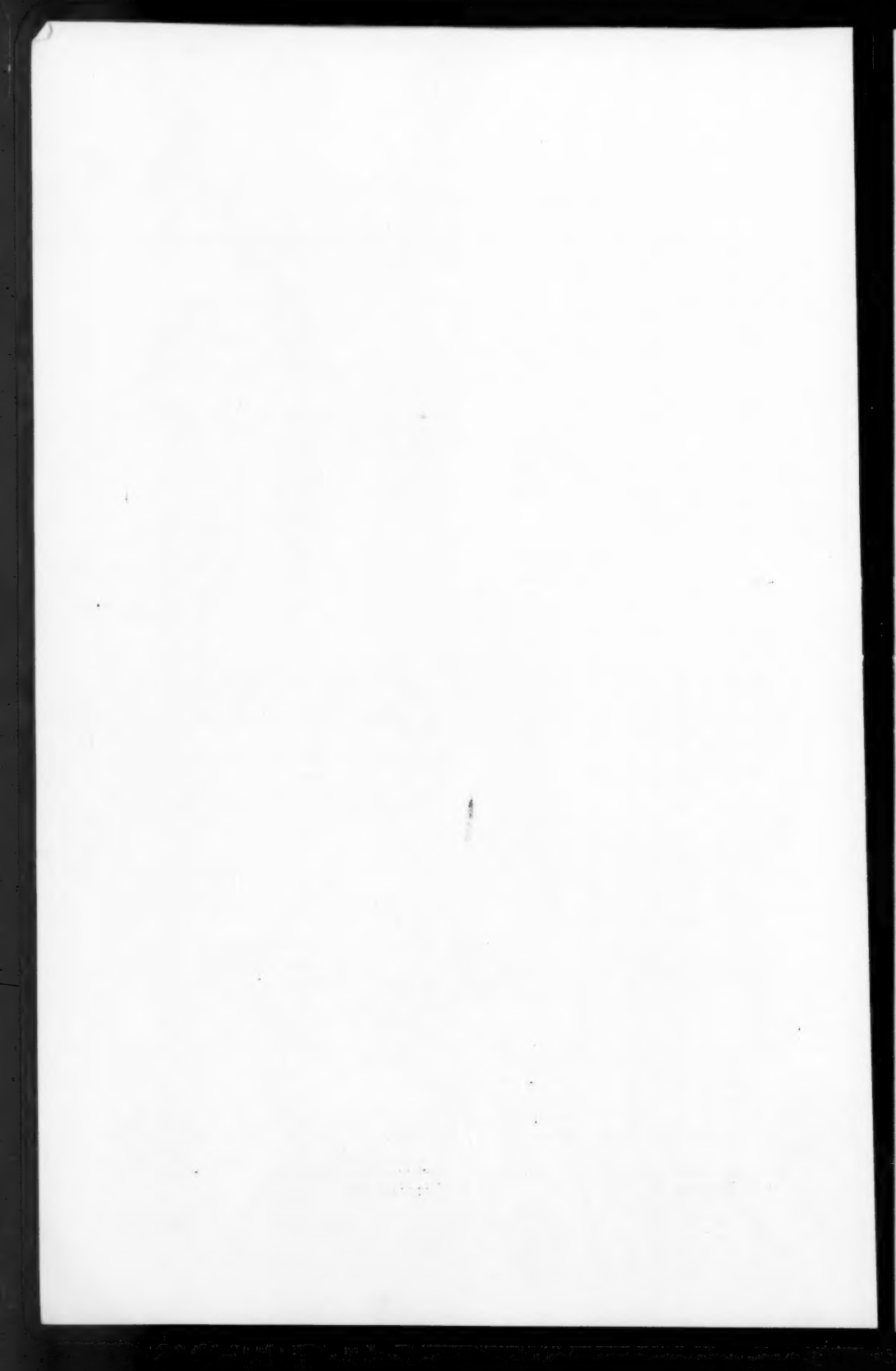
201. WILLIAMS, E. M. "An Investigation of the Value of Higher School Certificate Results in Predicting Performance in First-Year University Examinations." *British Journal of Educational Psychology* 20: 73-82; June 1950.
202. WILSON, M. D. "The Vocational Preferences of Secondary Modern School Children." *British Journal of Educational Psychology* 23: 97-113, June; 163-79, November 1953.
203. WING, H. "Some Applications of Test Results to Education in Music." *British Journal of Educational Psychology* 24: 161-70; November 1954.
204. WISEMAN, S. "Symposium on the Effects of Coaching and Practice in Intelligence Tests." *British Journal of Educational Psychology* 24: 5-8; February 1954.
205. WISEMAN, S. "Symposium: The Use of Essays in Selection at Eleven Plus." *British Journal of Educational Psychology* 26: 172-79; November 1956.
206. WISEMAN, S. "The Use of an Interest Test in Eleven Plus Selection." *British Journal of Educational Psychology* 25: 92-98; June 1955.
207. WISEMAN, S., and WRIGLEY, J. "Coaching and Practice on Intelligence Tests." *British Journal of Psychology* 44: 83-94; May 1953.
208. WRIGLEY, J. "The Relative Efficiency of Intelligence and Attainment Tests as Predictors of Success in Grammar Schools." *British Journal of Educational Psychology* 25: 107-16; June 1955.
209. WRIGLEY, J. "Some Aspects of Selection for Grammar Schools." *Educational Review* 5: 229-37; June 1953.
210. YATES, A. "Symposium on the Effects of Coaching and Practice in Intelligence Tests." *British Journal of Educational Psychology* 23: 147-54; November 1953.



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### Forthcoming Issues

GUIDANCE. April 1957. Dugald S. Arbuckle, *Chairman*.

CURRICULUM. June 1957. J. Galen Saylor, *Chairman*.

SCIENCE AND MATHEMATICS. October 1957. John R. Mayor, *Chairman*.

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